

## Control Manual

## CM

Group: Chiller  
Part Number: CM CLIC STAND ALONE  
Date: 13 July 2023

# CLIC STAND ALONE Series Air-Cooled Scroll Compressor Chiller Water Generator Unit

**Model**

**25 TR**

**Refrigerant HFC-410A**

**50/60 Hz**



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**Manufactured in an ISO 9001 certified facility**



2023 Comfort Flex . Illustration and data cover the Comfort Flex product at the time of publication and we reserve the right to make changes in design and construction at any time without notice.

## SAFETY WARNINGS

This manual provides information on the control data of the Comfort Flex CLIC STAND ALONE series.

**NOTES:** Installation and maintenance must be performed only by qualified personnel who are familiar with local codes and regulations and who have experience with this type of equipment.

### ⚠ DANGER ⚠

LOCK OUT/LABEL all power sources before starting, pressurizing, depressurizing or shutting down the chiller. Disconnect electrical power before servicing equipment. More than one disconnection may be required to de-energize the unit. Failure to follow this warning to the letter can result in serious injury or death. Be sure to read and understand the installation, operating and service instructions in this manual.

### ⚠ WARNING ⚠

Electric shock danger. Improper handling of this equipment can cause personal injury or equipment damage. This equipment must be properly grounded. Control panel connections and maintenance should be performed only by personnel knowledgeable in the operation of the equipment being controlled. Disconnect electrical power before servicing equipment.

### ⚠ CAUTION ⚠

Static sensitive components. Static discharge during handling of the electronic circuit board can cause damage to components. Use a static strap before performing any service work. Never unplug any cables, circuit board terminal blocks, or power plugs while power is applied to the panel.

### ⚠ CAUTION ⚠

When moving refrigerant to/from the cooler using an auxiliary tank, a grounding strap should be used. An electrical charge builds up when halo-carbon refrigerant travels in a rubber hose. A grounding strap should be used between the auxiliary refrigerant tank and the cooler end sheet (ground to ground), which will safely carry the charge to ground. Failure to follow this procedure may result in damage to sensitive electronic components.

### ⚠ WARNING ⚠

If refrigerant leaks from the unit, there is a potential choking danger as the refrigerant will displace air in the immediate area. Be sure to follow all applicable published industry-related standards and local, state, and federal statutes, regulations, and codes if refrigerant is produced. Avoid exposing refrigerant to an open flame or other ignition source.

### ⚠ WARNING ⚠

Polyolester oil, commonly referred to as POE oil, is a synthetic oil used in many refrigeration systems and may be present in this Comfort Flex product. POE oil, if it ever comes in contact with PCV/CPVC, will coat the inside wall of the PVC/CPVC pipe and cause environmental stress fractures. Although there is no PCV/CPCV pipe in this product, keep this in mind when selecting piping materials for your application, as system failure and property damage could occur. Consult the pipe manufacturer's recommendations to determine appropriate pipe applications.

## DANGER IDENTIFICATION INFORMATION

### ⚠ DANGER ⚠

Danger indicates a dangerous situation which, if not avoided, will result in death or serious injury.

### ⚠ WARNING ⚠

Warning indicates a potentially dangerous situation which may result in property damage, personal injury or death if not avoided

### ⚠ CAUTION ⚠

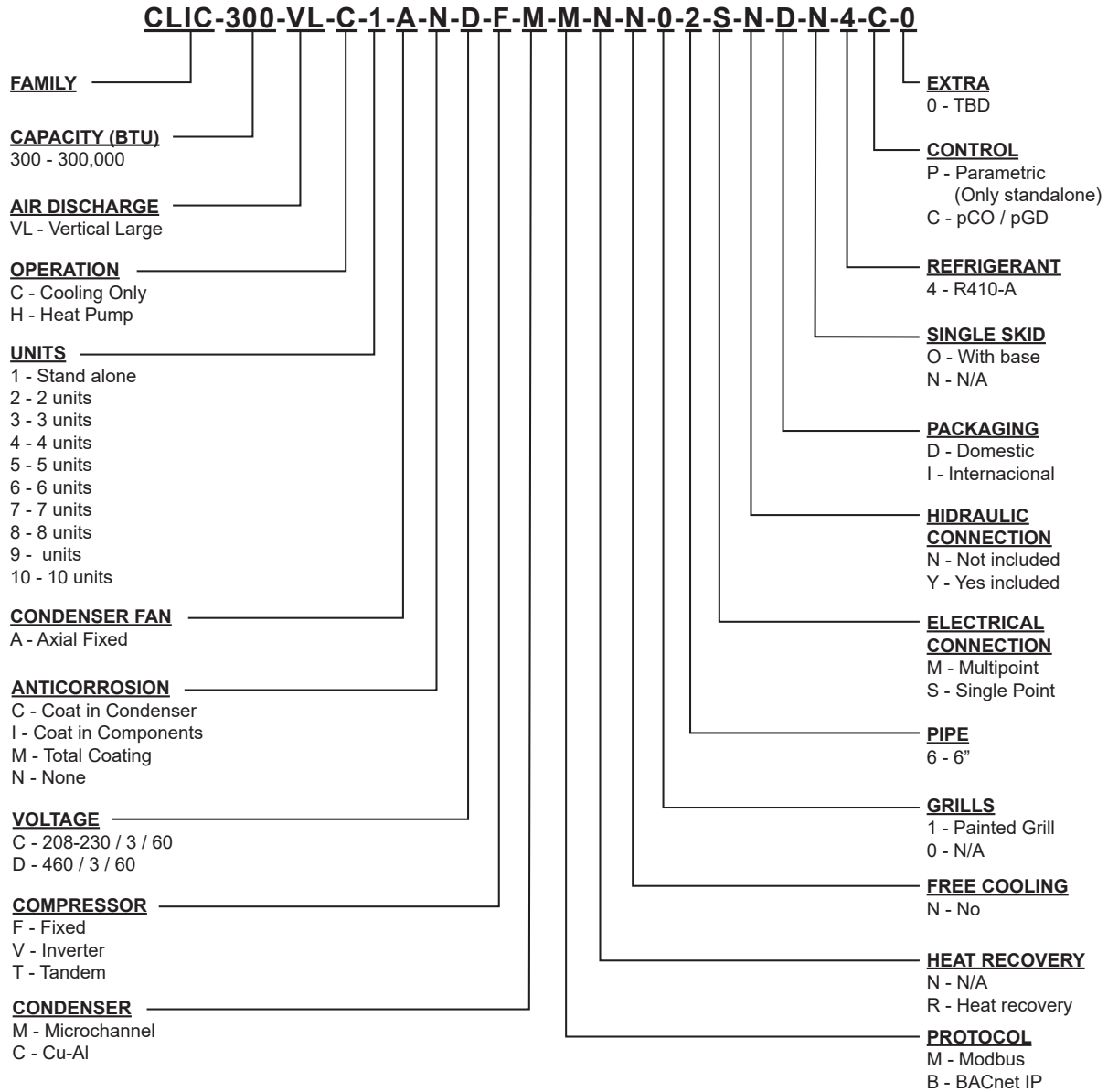
Caution indicates a potentially dangerous situation which may result in minor injury or equipment damage if not avoided.

**Notes:** Indicate important details or clarifying statements for the information presented.

Our units are built with design and control in mind, so we use specialized technical control software. Some of our special features are our own piping and wiring, Scroll type compressors, new generation evaporators, air cooler condensers, optional hydraulic components and various safety protections.

Our units are environmentally friendly and operate with R-410A refrigerant.

**NOMENCLATURE**



## FEATURES / BENEFITS

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### EFFICIENCY

Our units are designed to meet the needs of any project. Our intelligent process controllers and smart temperature sensors provide maximum performance and energy savings.

The system automatically modifies the operating mode to maintain optimum system conditions, making it very easy to operate.

All temperature sensors are calibrated and adjusted at the factory prior to shipment. Start-up should be performed by a qualified technician, during initial start-up the unit will be adjusted to local conditions and all operating points will be checked.

Once the unit has been placed in place, operation is a matter of pressing the start/stop button until it is certain that the unit is operating properly, after which the unit will operate automatically, turning itself on according to the demand of the refrigeration system and local conditions.

### FLEXIBILITY

The units feature intelligent processors and sensors that automatically control the temperature at optimum operating conditions.

### SAFETY

All frames are manufactured from galvanized sheet steel, coated with electrostatic baked-on paint to ensure long durability and freedom from corrosion under all weather conditions, such as direct sunlight, rain and wind.

All units are designed to fit into a small installation space, thus eliminating large installation areas. We use only high quality components to ensure durability and safety even in harsh environmental conditions.

**NOTE: For applications in tropical climates, our units are coated inside and out with corrosion protection (over-ordering).**

Our products have AHRI efficiency certifications and ETL safety certifications, in addition to meeting all industry safety standards.

We are members of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). To show our commitment to our customers and stakeholders; our equipment comes with a 1 year major warranty after start-up.

Our units use R410A refrigerant, which is harmless to the ozone layer and is non-toxic and non-flammable, even in case of leakage.

Finally, the efficiency of the heat exchanger and its modular design allow for quick and easy installation.

### DESIGN

Research conducted by the Engineering Department has resulted in units with high design efficiency and optimum performance. The selection of the main components, our quality and control system guarantee high performance and safety.

All major components are rigorously tested and qualified before installation. Each designed unit has undergone long hours of rigorous testing to ensure the safety, durability and quality of the entire system.

### COMMUNICATION

The units can be connected to a central control unit. Operation and user access will be through a 7" color touch screen.

Our units can be managed through different communication protocols; such as Modbus and BACnet, the most commonly used protocols in the Air Conditioning industry.

Our units keep track of all programmable variables in real time, such as performance monitoring, refrigeration cycle specific alarms and electrical system.

The control and monitoring system ensures the correct operation of the unit by monitoring in real time the condition of the major components (high or low refrigerant pressure, compressor and fan motor conditions, etc.).

In case of failure, the event will be recorded for later analysis, facilitating the localization of a possible failure and its solution.

### INSTALLATION

The units have been designed for easy installation. Screw connections provide easy installation of the water piping, which are located on both sides of the unit, so that the piping can be connected to either side of the unit.

The individual assembly of the units reduces installation cost, the units have a rigid base that balances the weight of the unit and allows for easy installation.

### MAINTENANCE

The simplicity in the design of each unit allows for maximum ease of maintenance. All major components are available to maintenance personnel by simply opening the service panel.

If an emergency shutdown occurs, the control section will indicate in detail the cause of the failure, helping to facilitate and accelerate troubleshooting.

## TESTING

Each unit is pressure and vacuum tested and then charged with the refrigerant required for proper operation based on the customer's installation conditions.

The units are evaluated at full load operation with water flow, heat load and line voltage placed at actual operating conditions.

**NOTE: The warranty policy requires that commissioning be performed by qualified personnel authorized by the company.**

## INSITUM<sup>®</sup> CORROSION PROTECTION

### *Spray for coating hvac/r products*

Coating is a flexible, water-based, water-reducible, synthetic polymer corrosion coating designed specifically for the protection of HVAC/R coils and components. Insitu<sup>®</sup> Spray Applied Coating contains ES2 (embedded stainless steel pigment) technology, an anti-corrosion coating specifically designed for the protection of coils mounted in corrosive areas.

HVAC/R coils, components and enclosures will have a permanent water-based synthetic coating with ES2 pigment applied to all areas of the coating surface with no bridging of material between fins. Therefore, ES2 pigments are suitable for even the most corrosive environments and will maintain their appearance after many years of exposure. UV degradation ES2 pigments form a multilayer structure throughout the paint film.

This creates a barrier layer that reflects sunlight away from the paint film preventing UV rays from penetrating. As a result, UV degradation of individual polymer molecules is eliminated, film integrity is maintained and the pigment particles remain well anchored to the substrate.

The resulting smooth, hard finish prevents dirt build-up. The multilayer structure of ES2 pigments delays the passage of water molecules into the film and acts as an effective moisture barrier



### **Ideal applications for Insitu<sup>®</sup> spray-applied coatings.**

- Mini-splits
- Packaged enclosures
- Condensing units
- Modular air handlers
- Air-cooled chillers
- Indoor and outdoor HVAC cabinets and copper tubing
- Heat exchange coils (water, condenser, evaporator, DX)

## CONTROL

### DESCRIPTION OF MICROCHILLER FORNTAL DISPLAY BUTTONS

#### Button up

When this button is pressed, you can scroll to the previous parameter and in programming mode it is used to increment the parameter value.



#### Button down

When this button is pressed, you can scroll to the next parameter and in programming mode it is used to set the parameter value.



#### Main menu

Pressing this button briefly allows you to return to the main screen of the controller.  
 By pressing this button for 3 seconds you can access the Setpoint or unit on/off parameters.



#### Symbol and alarm button

This symbol means that an active alarm is present in the controller and will appear on the main screen with a red led and the alarm description. Briefly pressing this symbol will clear the sound alarm and pressing this button for 3 seconds will reset the alarm in case there is no major alarm or a continuous alarm present.



#### Programming mode access button

This button is used to access the programming mode.

In Programming mode:

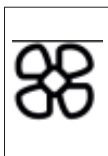
When in programming mode pressing this button briefly confirms the parameter value.

When in programming mode pressing this button for 3 seconds will return to the main menu.

### ICON DESCRIPTION



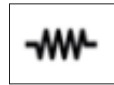
When this icon is present on the controller it means that the pump is active, if the icon is flashing it means that the pump is in a manual mode.



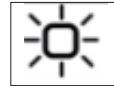
When this icon is present on the controller it means that the fan is active, if the icon is blinking it means that the fan is in manual mode. Currently the fan control of the equipment is electrically linked to the pump start which means that when the pump is turned on the fan is turned on, however this icon is currently represented on the controller as fan present.



When this icon is present on the controller it means that the compressor is active, if the icon is blinking it means that it is in manual mode.



When this icon is present on the controller it means that the freeze protection process has started, however this symbol is also present when switching from cold to hot.



When this icon is present on the controller it means that the controller is operating in heat mode.



When this icon is present on the controller it means that the controller is operating in cold mode.



When this icon is present on the controller it means that it is in a major alarm, otherwise it may be a damage in the control or it may require some specialized service.

### DIRECT ACCESS FUNCTIONS

In order to access the direct access functions without the need for users or passwords press the down button for 3 seconds and the following options will appear such as Setpoint change. This last option is disabled in some units because this option can be done directly from a button located inside the panel which has the purpose of being able to make the change from cold to heat from the unit or otherwise you can also make the change directly from the Carel application which controls the parameterization of the control from a mobile application.

#### Procedure:

- Press the down arrow button for 3 seconds for 3 seconds.
- To scroll press the keys with the up or down arrow button.
- The PRG or circle button allows you to change the value or save the changes.
- The PRG or circle button pressed for 3 seconds returns to the main screen.



- Go to the main screen.



- This parameter is the current setpoint in COOL mode but read only.



- Press the down arrow key and the SEtC parameter will appear. This parameter is the cooling Setpoint to change from here you can change the Setpoint in COOL mode.



- Press the PRG or circle key: the value on the display will change from static to flashing, at which point you can press the up or down keys to change the setpoint. Once the desired change has been made, momentarily press the PRG or circle key to confirm and save the change.



- Press the down key again and the SEtH menu will appear, this parameter is used to change the setpoint in HEAT mode only when the units have this option available otherwise it will not appear.



- Press the down key again and the UnST menu will appear, from here you can turn the unit on or off. In some units this parameter is not available because currently there is a switch on the panel to turn the unit on or off, otherwise, this parameter is also linked in the application from the cell phone to be able to turn on or off.



- Press the down key again and the UON menu will appear, from here you can change the units of measurement.



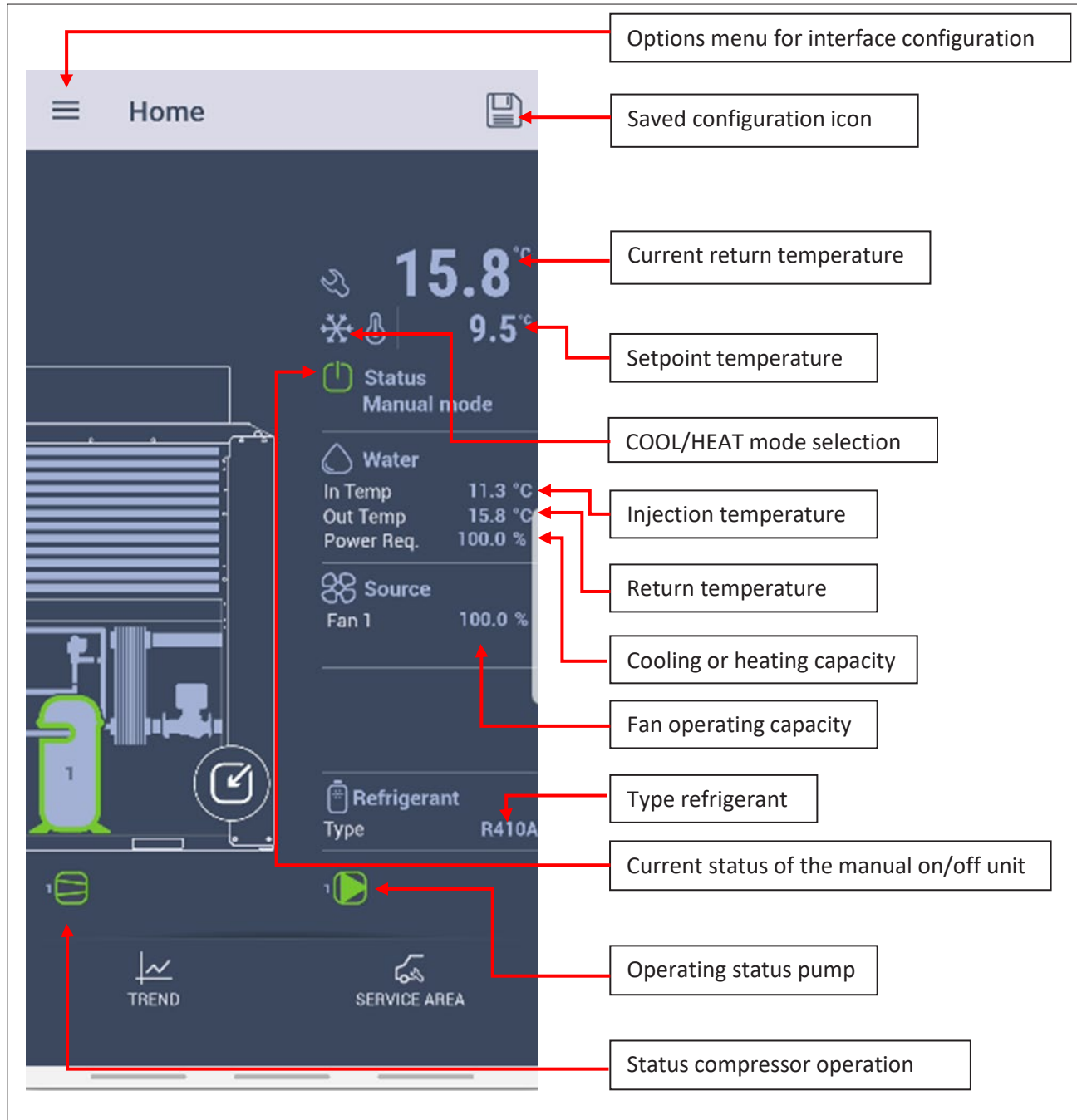
- After the parameters have been set, the output screen will appear on the main screen.



## CONTROL

### DESCRIPTION OF THE INTERFACE SCREEN OF THE CAREL APPLICATION VIA CELLULAR PHONE

The following image shows the interface of the carel application through Bluetooth communication and monitoring of equipment operation.



**NOTE:** The microchiller controller cannot be used in tandem units.

**ALARMS**

Alarm	Description
A05	This alarm indicates when the water return sensor is damaged or broken.
A06	This alarm indicates when the water injection sensor is damaged or broken.
A10	This alarm indicates when there is a problem with or water flow problem.
A12	This alarm usually appears together with the A10 alarm as it depends on the configuration to which the pump was commissioned, otherwise the current equipment containing this controller simply has a pump configured in this case this alarm goes together with the current pump configuration.
A15	This alarm usually appears when the water temperature does not drop due to the current cooling process. This alarm is more of a warning than a serious alarm as it is simply an indicator that the equipment is not cooling and therefore the water temperature is not dropping.
A20	This alarm indicates when the condenser temperature probe is broken or disconnected.
A21	This alarm indicates when the suction temperature probe is broken or disconnected.
A25	This alarm indicates when the high pressure switch has suffered a change in its signal.
A29	This alarm indicates when the low pressure switch is active.

**MICROCHILLER CONTROLLER INPUTS AND OUTPUTS**

DIGITAL INPUTS	
PORT	DESCRIPTION
ID1	WATER FLOW SENSOR
ID2	HEAT-COLD SWITCH
ID3	LOW PRESSURE SWITCH
ID4	HIGH PRESSURE SWITCH

ANALOG INPUTS	
PORT	DESCRIPTION
S1	WATER INJECTION TEMPERATURE SENSOR
S2	WATER RETURN TEMPERATURE SENSOR
S3	COLD WATER TEMPERATURE SENSOR

DIGITAL OUTPUTS	
PORT	DESCRIPTION
N01	DIGITAL COMPRESSOR OUTPUT
N03	DIGITAL WATER PUMP OUTPUT

**BASIC OPERATING PARAMETERS MICROCHILLER**

The following parameters are intended for fast equipment startup and unit configuration.

Parameter	Value
U077	0
S068	0
U076	0
C046	1
C047	0
S065	0
S064	0
Hc31	7
Hc32	8
Hc14	1
Hc15	2
Hc06	9
Hc07	4
U006	5.0
U007	20.0
U008	30.0
U009	45.0
Hc013	1

## MAPPING TABLES

### Coil Status

Index	Size	Acronym	Data Type	Min Value	Max Value	R/W	Init Value	UoM	Description
0	1	U001	BOOL			R/W	FALSE		U001 - User pump 1 reset hour counters
1	1	U004	BOOL			R/W	FALSE		U004 - User pump 2 reset hour counters
2	1	U010	BOOL			R/W	FALSE		U010 - Enable set point compensation (0=Disabled, 1=Enabled)
3	1	U017	BOOL			R/W	FALSE		U017 - Enable scheduler (0=Disabled, 1=Enabled)
4	1	U022	BOOL			R/W	FALSE		U022 - Type of scheduling (0=Switch OFF, 1=Change set point)
5	1	U034	BOOL			R/W	FALSE		U034 - Cool/heat changeover type (0=keypad, 1=DIn)
6	1	U036	BOOL			R/W	FALSE		U036 - Startup control probe (0=Return, 1=Delivery)
7	1	U038	BOOL			R/W	TRUE		U038 - Run control probe (0=Return, 1=Delivery)
8	1	U057	BOOL			R/W	FALSE		U057 - Remote alarm input logic (0=N.C., 1=N.O.)
9	1	U058	BOOL			R/W	TRUE		U058 - Cool/Heat input logic (0=N.O., 1=N.C.)
10	1	U059	BOOL			R/W	TRUE		U059 - Remote unit ON/OFF input logic (0=N.O., 1=N.C.)
11	1	U060	BOOL			R/W	FALSE		U060 - User pump flow input logic (0=N.C., 1=N.O.)
12	1	U061	BOOL			R/W	FALSE		U061 - User pump overload input logic (0=N.C., 1=N.O.)
13	1	U062	BOOL			R/W	TRUE		U062 - 2nd set point input logic (0=N.O., 1=N.C.)
14	1	U063	BOOL			R/W	FALSE		U063 - User pump output logic (0=N.O., 1=N.C.)
15	1	U064	BOOL			R/W	FALSE		U064 - Global alarm relay output logic (0=N.C., 1=N.O.)
16	1	U065	BOOL			R/W	FALSE		U065 - Free-Cooling valve output logic (0=N.O., 1=N.C.)
17	1	U066	BOOL			R/W	FALSE		U066 - Frost heater output logic (0=N.O., 1=N.C.)
18	1	U067	BOOL			R/W	FALSE		U067 - Alarm relay configuration (0=Control alarms, 1=All alarms)
19	1	U068	BOOL			R/W	FALSE		U068 - Enable Free-Cooling (0=Disabled, 1=Enabled)
20	1	E000	BOOL			R/W	FALSE		E000 - ExV circ.1 enable manual mode
21	1	E002	BOOL			R/W	FALSE		E002 - ExV circ.2 enable manual mode
22	1	Hd06	BOOL			R/W	FALSE		Hd06 - Enable capacity request from BMS (0=Disabled, 1=Enabled)
23	1	C001	BOOL			R/W	FALSE		C001 - Comp.1 circ.1 reset hour counters
24	1	C004	BOOL			R/W	FALSE		C004 - Comp.2 circ.1 reset hour counters
25	1	C007	BOOL			R/W	FALSE		C007 - Comp.1 circ.2 reset hour counters
26	1	C010	BOOL			R/W	FALSE		C010 - Comp.2 circ.2 reset hour counters
27	1	C034	BOOL			R/W	FALSE		C034 - High press. switch input logic (0=N.C., 1=N.O.)
28	1	C035	BOOL			R/W	FALSE		C035 - Comp. overload input logic (0=N.C., 1=N.O.)
29	1	C036	BOOL			R/W	FALSE		C036 - Comp. output logic (0=N.O., 1=N.C.)
30	1	C044	BOOL			R/W	FALSE		C044 - Enable circuit destabilisation (0=Disabled, 1=Enabled)
31	1	S001	BOOL			R/W	FALSE		S001 - Source pump 1 reset hour counters
33	1	S009	BOOL			R/W	FALSE		S009 - Source fan 1 circ.1 reset hour counters
34	1	S013	BOOL			R/W	FALSE		S013 - Source fan 1 circ.2 reset hour counters
35	1	S020	BOOL			R/W	FALSE		S020 - Enable low noise (0=Disabled, 1=Enabled)
37	1	S043	BOOL			R/W	FALSE		S043 - Enable sliding defrost (0=Disabled, 1=Enabled)
38	1	S055	BOOL			R/W	FALSE		S055 - Comp. behavior in post-defrost phase (0=Comp. is OFF, 1=Comp. is switched ON)
39	1	S061	BOOL			R/W	FALSE		S061 - Source fan output logic (0=N.O., 1=N.C.)
40	1	S062	BOOL			R/W	FALSE		S062 - Source pump output logic (0=N.O., 1=N.C.)
41	1	S063	BOOL			R/W	FALSE		S063 - Reverse valve output logic (0=N.O., 1=N.C.)
42	1	S064	BOOL			R/W	FALSE		S064 - Source flow type (0=Independent, 1=Common)
44	1	S065	BOOL			R/W	FALSE		S065 - Source fan type (0=Inverter, 1=ON/OFF)
45	1	rStr	BOOL			R/W	FALSE		rStr - Restore application to Carel settings (0=Disabled, 1=Enabled)
46	1	S068	BOOL			R/W	FALSE		S068 - Source type (0=Air, 1=Water)
47	1	UoM	BOOL			R/W	FALSE		UoM - Unit of measure used for Display 2-Row and BMS, not for Applica (0=°C/bar, 1=°F/PSI)
48	1	Hd07	BOOL			R/W	FALSE		Hd07 - BMS port database type (0= 32bit, 1= 16bit)
49	1	F027	BOOL			R/W	FALSE		F027 - Compressor with capacity control
50	1	Hc13	BOOL			R/W	TRUE		Hc13 - Enable buzzer (0=Disabled, 1=Enabled)
52	1	Ha02	BOOL			R/W	FALSE		Ha02 - Set controller internal clock (0=No set, 1=Set)
53	1	Hd03	BOOL			R/W	TRUE		#N/D
54	1	UnSt	BOOL			R/W	FALSE		UnSt - Unit ON/OFF command from keypad (0=OFF 1=ON)
55	1	ModE	BOOL			R/W	FALSE		ModE - Cool/Heat mode from keypad (0=Cool, 1=Heat)
56	1	RES	BOOL			R/W	FALSE		RES - Reset active alarms from BMS net (0=NO, 1=Reset)
57	1	DevRotReq_ Comp1Circ1	BOOL			R/W			Request comp.1 circ.1 by DeviceRotation

Index	Size	Acronym	Data Type	Min Value	Max Value	R/W	Init Value	UoM	Description
58	1	DevRotReq_Comp2Circ1	BOOL			R/W			Request comp.2 circ.1 by DeviceRotation
59	1	ClrH	BOOL			R/W	FALSE		ClrH - Delete alarms log (0=No, 1=Yes)
60	1	UnitOn_Slv	BOOL			R/W			Unit ON/OFF status (0=OFF, 1=ON) sent to Secondary board
61	1	UsrPmp2_On_Slv	BOOL			R/W			Command to manage user pump 2 (Secondary board)
62	1	AFreezeHeat_Slv	BOOL			R/W			Command to manage the frost heater (Secondary board)
63	1	Hd05	BOOL			R/W	FALSE		Hd05 - Enable unit ON/OFF command by BMS net (0=Disabled, 1=Enabled)
64	1	BmsOnOff	BOOL			R/W			Unit On/Off command from BMS (0=OFF, 1=ON)
65	1	HeatCool_Slv	BOOL			R/W			Unit in cooling mode sent to secondary board (0=Heating, 1=Cooling)
66	1	P016	BOOL			R/W	FALSE		P016 - Oil equalisation solenoid valve circ.1 output logic (0=NC, 1=NO)
67	1	P017	BOOL			R/W	TRUE		P017 - Enable oil equalisation function (0=OFF, 1=ON)
68	1	P018	BOOL			R/W	FALSE		P018 - Enable oil recovery function (0=OFF, 1=ON)
69	1	P034	BOOL			R/W	FALSE		P034 - Enable crancckcase heater (0=OFF, 1=ON)
70	1	Al_SrsUnit_StopSlv	BOOL			R/W			Main sends Serious alarm to stop Secondary
71	1	CompCfg_BLD.C.En_VaporInjection	BOOL			R/W	FALSE		#N/D
72	1	SlaveTyp_OnOff	BOOL			R/W	FALSE		Secondary type (0=Secondary connected to CORE-1 with Rotation, 1= Secondary connected to CORE-0 with EasyRot for ON/OFF)
73	1	ManInstDef_PWRP	BOOL			R/W			Request default installation of Power+ circ.1
74	1	MC_UnitTyp	BOOL			R/W	FALSE		MC unit(0= NO, 1= YES)
75	1	En_uC2SE	BOOL			R/W	FALSE		#N/D
76	1	C051	BOOL			R/W	FALSE		C051 - Low press. switch input logic (0=N.C., 1=N.O.)
77	1	F003	BOOL			R/W	FALSE		F003 - Evaporator number uC2SE (0=1, 1=2)
78	1	F020	BOOL			R/W	TRUE		F020 - Remote compressor command input logic (0=N.C., 1=N.O.)
79	1	F007	BOOL			R/W	FALSE		F007 - S4 probe fitted on source exchanger [uCH2SE] (0= NO, 1=YES: in CH read cond., in HP read evap.)
80	1	U078	BOOL			R/W	FALSE		U078 - Enable burst function (0=Disabled, 1=Enabled)
81	1	F016	BOOL			R/W	FALSE		F016 - Heaters active during defrost (0=OFF, 1=ON)
82	1	F017	BOOL			R/W	FALSE		F017 - User fan device activation mode (0=Always ON, 1=ON by control)
83	1	UsrHeater1	BOOL			R/W	FALSE		UsrHeater1 - User heater 1 status
84	1	F011	BOOL			R/W	FALSE		F011 - Heater output logic (0=N.O., 1=N.C.)
85	1	F023	BOOL			R/W	FALSE		F023 - Correspondence D.I. to D.O. compressors (for MC units only) (0=FALSE, 1=TRUE)
87	1	UsrFanON	BOOL			R/W	FALSE		UsrFanON - User fan ON
88	1	FC_Agree	BOOL			R/W			Free cooling condition exists (0=FC not possible; 1=FC possible)
89	1	En_SrcRetTempPrb	BOOL			R/W	FALSE		En_SrcRetTempPrb - Connected source return temperature probe
90	1	WaitOtherDevCirc1_SmartOpnExV	BOOL			R/W			0
91	1	LowNoiseActive	BOOL			R/W	FALSE		Low noise function active
92	1	S073	BOOL			R/W	FALSE		S073 - Compressor status at defrost in (0 : Minimum speed, 1: OFF)
93	1	U082	BOOL			R/W	FALSE		U082 - Frost measurement type (0=ON EVAP, 1=ON WATER)
94	1	F028	BOOL			R/W	FALSE		F028 - Air heating: Control temp. probe for user heaters (0=ROOM, 1=DELIVERY)
95	1	AFreezeHeatUsr	BOOL			R/W			User frost heater status
97	1	AFreezeHeatSrc	BOOL			R/W			Source frost heater status
96	1	S066	BOOL			R/W	TRUE		S066 - Source water flow type (0=Independent, 1=Common)
117	1	S074	BOOL			R/W	FALSE		S074 - Source fan/pmp alarm input logic (0=N.C., 1=N.O.)
121	1	U093	BOOL			R/W	FALSE		U093 - Flow alarm management

## Holding Register

Index	Size	Acronym	Data Type	Min Value	Max Value	R/W	Init Value	UoM	Description
0	2	Ha00	DATE_AND_TIME			R/W	0		Ha00 - New date and time to set on the controller's internal clock
2	1	U000	UINT(0..999)			R/W	99	HOUR	U000 - User pump 1 maintenance hour threshold (x100)
3	1	U002	UINT(0..2)			R/W	0		U002 - User pump 1/fan manual mode (0=AUTO, 1=OFF, 2=ON)
4	1	U003	UINT(0..999)			R/W	0	HOUR	U003 - User pump 2 maintenance hour threshold (x100)
5	1	U005	UINT(0..2)			R/W	0		U005 - User pump 2 manual mode (0=AUTO, 1=OFF, 2=ON)
6	1	U083	USINT(0..3)			R/W	0		U083 - Automatic changeover type
7	2	U006	REAL			R/W	5	CELSIUS	U006 - Cool set point low limit
9	2	U007	REAL			R/W	20	CELSIUS	U007 - Cool set point high limit
11	2	U008	REAL			R/W	30	CELSIUS	U008 - Heat set point low limit
13	2	U009	REAL			R/W	45	CELSIUS	U009 - Heat set point high limit
15	2	U011	REAL			R/W	25	CELSIUS	U011 - Start temp. for cool set point compensation
17	2	U012	REAL			R/W	10	CELSIUS	U012 - End temp. for cool set point compensation
19	2	U013	REAL			R/W	5	DELTAKELVIN	U013 - Max compensation for cool set point
21	2	U014	REAL			R/W	5	CELSIUS	U014 - Start temp. for heat set point compensation
23	2	U015	REAL			R/W	-10	CELSIUS	U015 - Outside temp. diff. for heat set point compensation
25	2	U016	REAL			R/W	5	DELTAKELVIN	U016 - Max compensation for heat set point
27	1	U018	UINT			R/W	0	HOUR	Time band hours
28	1	U019	UINT			R/W	0	MINUTE	Time band minutes
29	1	U020	UINT			R/W	0	HOUR	Time band hours
30	1	U021	UINT			R/W	0	MINUTE	Time band minutes
31	2	U023	REAL			R/W	10	CELSIUS	U023 - 2nd cool set point
33	2	U024	REAL			R/W	35	CELSIUS	U024 - 2nd heat set point
35	1	U025	USINT(0..2)			R/W	0		U025 - Analogue set point input type (0=0-5V, 1=0-10V, 2=4-20mA)
36	1	F008	UINT(0..999)			R/W	10	SECOND	F008 - Antifreeze alarm delay
37	2	U026	REAL			R/W	5	CELSIUS	U026 - Remote set point min value
39	2	U027	REAL			R/W	35	CELSIUS	U027 - Remote set point max value
41	1	S023	UINT			R/W	0	HOUR	Time band hours
42	1	S024	UINT			R/W	0	MINUTE	Time band minutes

## MAPPING TABLES

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	Init Value	UoM	Description
43	2	U028	REAL			R/W	0	DELTAKELVIN	U028 - Remote set point offset
48	1	E046	UINT	0	35	R/W	1		E046 - ExV valve type for EVD EVO (1=CAREL EXV, ...)
49	2	U031	REAL			R/W	10	DELTAKELVIN	U031 - High water temp. set point offset
51	1	U032	USINT(0..99)			R/W	15	MINUTE	U032 - High water temp. startup delay
52	1	U033	UINT(0..999)			R/W	180	SECOND	U033 - High water temp.run delay
53	1	U035	UINT(0..999)			R/W	1	MINUTE	U035 - Changeover delay time
54	1	U037	UINT(0..999)			R/W	180	SECOND	U037 - Delay time between Startup PID and Run PID
55	2	U039	REAL			R/W	8.3		U039 - Startup PID Kp
57	1	U040	UINT(0..999)			R/W	180	SECOND	U040 - Startup PID Ti
58	1	U041	UINT(0..99)			R/W	0	SECOND	U041 - Startup PID Td
59	2	U042	REAL			R/W	10		U042 - Run PID Kp
61	1	U043	UINT(0..999)			R/W	120	SECOND	U043 - Run PID Ti
62	1	U044	UINT(0..99)			R/W	0	SECOND	U044 - Run PID Td
63	1	U045	UINT(0..999)			R/W	10	SECOND	U045 - User pump flow alarm startup delay
64	1	U046	UINT(0..99)			R/W	3	SECOND	U046 - User pump flow alarm run delay
65	1	U047	UINT(0..999)			R/W	30	SECOND	U047 - Comp. ON delay after user pump ON
66	1	U048	UINT(0..999)			R/W	180	SECOND	U048 - User pump delay OFF from comp. OFF
67	1	U049	UINT(0..999)			R/W	5	HOURL	U049 - User pump rotation time
68	2	U050	REAL			R/W	-0.8	CELSIUS	U050 - User frost alarm threshold
70	2	U051	REAL			R/W	30	DELTAKELVIN	U051 - User frost alarm differential
72	1	U052	UINT(0..999)			R/W	30	SECOND	U052 - User frost alarm delay time at 1K below threshold
73	2	U053	REAL			R/W	4	CELSIUS	U053 - Frost (with unit OFF) set point
75	2	U054	REAL			R/W	2	DELTAKELVIN	U054 - Frost (with unit OFF) differential
78	1	Dfr	USINT(0..3)			R/W	0		Dfr - Force manual defrost (0=None, 1= Force defrost on circ. 1, 2= Force defrost on circ. 2, 3= Force defrost on all circuits)
79	2	U055	REAL			R/W	0	DELTAKELVIN	U055 - Probe offset for return water temp. from user
83	2	U056	REAL			R/W	0	DELTAKELVIN	U056 - Probe offset for delivery water temp. to user
85	2	U069	REAL			R/W	3	DELTAKELVIN	U069 - Delta temp. to activate Free Cooling
87	2	U070	REAL			R/W	1.5	DELTAKELVIN	U070 - Free-Cooling ON/OFF hysteresis
89	2	U071	REAL			R/W	8	DELTAKELVIN	U071 - Delta temp. Free-Cooling design (to reach unit nominal capacity)
91	2	U072	REAL			R/W	5	CELSIUS	U072 - Free Cooling limit threshold (used to close FC valve: because FC gives water with very low temp.)
93	2	U073	REAL			R/W	3	DELTAKELVIN	U073 - Free-Cooling limit differential
95	1	U074	USINT(0..2)			R/W	0		U074 - Free-Cooling type (0=Air, 1=Remote air coil, 2=Water)
96	1	U075	USINT(0..2)			R/W	2		U075 - Frost type (0=Heater, 1=Pump, 2=Heater-Pump)
97	1	U076	USINT(1..2)			R/W	1		U076 - User pump number
98	1	U077	USINT	0	2	R/W	0		U077 - Unit type (0=CH, 1=HP, 2=CH/HP, 3=MC CH, 4=MC CH/HP, 5=A/A CH, 6=A/A CH/HP, 7=W/W CH/HP with water reverse)
99	1	E001	UINT(0..65535)			R/W	0	STEPS	E001 - ExV circ.1 manual mode steps
100	1	E003	UINT(0..65535)			R/W	0	STEPS	E003 - ExV circ.2 manual mode steps
101	2	E004	REAL			R/W	6	DELTAKELVIN	E004 - ExV SH set point in cool
103	2	E005	REAL			R/W	15		E005 - ExV SH control Kp in cool
105	2	E006	REAL			R/W	150	SECOND	E006 - ExV SH control Ti in cool
107	2	E007	REAL			R/W	1	SECOND	E007 - ExV SH control Td in cool
109	2	E008	REAL			R/W	6	DELTAKELVIN	E008 - ExV SH set point in heat
111	2	E009	REAL			R/W	15		E009 - ExV SH control Kp in heat
113	2	E010	REAL			R/W	150	SECOND	E010 - ExV SH control Ti in heat
115	2	E011	REAL			R/W	1	SECOND	E011 - ExV SH control Td in heat
117	2	E012	REAL			R/W	1	DELTAKELVIN	E012 - ExV low SH threshold in cool
119	2	E013	REAL			R/W	10	SECOND	E013 - ExV low SH Ti in cool
121	2	E014	REAL			R/W	1	DELTAKELVIN	E014 - ExV low SH threshold in heat
123	2	E015	REAL			R/W	10	SECOND	E015 - ExV low SH Ti in heat
125	2	E016	REAL			R/W	-5	CELSIUS	E016 - ExV LOP control threshold in cool
127	2	E017	REAL			R/W	5	SECOND	E017 - ExV LOP control Ti in cool
129	2	E018	REAL			R/W	-50	CELSIUS	E018 - ExV LOP control threshold in heat
131	2	E019	REAL			R/W	5	SECOND	E019 - EEV LOP control Ti in heat
133	2	E020	REAL			R/W	30	CELSIUS	E020 - ExV MOP control threshold in cool
135	2	E021	REAL			R/W	15	SECOND	E021 - ExV MOP control Ti in cool
137	2	E022	REAL			R/W	20	CELSIUS	E022 - ExV MOP control threshold in heat
139	2	E023	REAL			R/W	15	SECOND	E023 - ExV MOP control Ti in heat
141	1	E024	UINT(0..18000)			R/W	300	SECOND	E024 - ExV low SH alarm delay time
142	1	E025	UINT(0..18000)			R/W	300	SECOND	E025 - ExV LOP alarm delay time
143	1	E026	UINT(0..18000)			R/W	300	SECOND	E026 - ExV MOP alarm delay time
144	1	E032	UINT(0..100)			R/W	100	PERCENT	E032 - ExV startup valve opening % (capacity ratio EVAP / EEV) in cool
145	1	E033	UINT(0..100)			R/W	100	PERCENT	E033 - ExV startup valve opening % (capacity ratio EVAP / EEV) in heat
146	1	E034	UINT(0..18000)			R/W	6	SECOND	E034 - ExV control delay after pre-positioning
147	1	Hd00	USINT(1..247)			R/W	1		Hd00 - BMS port serial address
148	1	Hd01	USINT(3..7)			R/W	4		Hd01 - BMS port baud rate (3=9600, 4=19200, 5=38400, 6=57600, 7=115200)
149	1	Hd02	USINT(0..5)			R/W	1		Hd02 - BMS port network settings (0=8-NONE-1, 1=8-NONE-2, 2=8-EVEN-1, 3=8-EVEN-2, 4=8-ODD-1, 5=8-ODD-2)
153	1	C000	UINT(0..999)			R/W	99	HOURL	C000 - Comp.1 circ.1 maintenance hour threshold (x100)
154	1	C002	USINT(0..2)			R/W	0		C002 - Comp.1 circ.1 manual mode (0=AUTO, 1=OFF, 2=ON)
155	1	C003	UINT(0..999)			R/W	99	HOURL	C003 - Comp.2 circ.1 maintenance hour threshold (x100)
156	1	C005	USINT(0..2)			R/W	0		C005 - Comp.2 circ.1 manual mode (0=AUTO, 1=OFF, 2=ON)
157	1	C006	UINT(0..999)			R/W	99	HOURL	C006 - Comp.1 circ.2 maintenance hour threshold (x100)
158	1	C008	USINT(0..2)			R/W	0		C008 - Comp.1 circ.2 manual mode (0=AUTO, 1=OFF, 2=ON)
159	1	C009	UINT(0..999)			R/W	99	HOURL	C009 - Comp.2 circ.2 maintenance hour threshold (x100)
160	1	C011	USINT(0..2)			R/W	0		C011 - Comp.2 circ.2 manual mode (0=AUTO, 1=OFF, 2=ON)
162	1	C012	UINT(0..999)			R/W	180	SECOND	C012 - Comp. min On time
163	1	C013	UINT(0..999)			R/W	60	SECOND	C013 - Comp. min Off time
164	1	C014	UINT(0..999)			R/W	360	SECOND	C014 - Min time between On of same comp.

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	Init Value	UoM	Description
165	1	C015	UINT(5..999)			R/W	30	SECOND	C015 - Comp. load up time
166	1	C016	UINT(5..999)			R/W	10	SECOND	C016 - Comp. load down time
167	1	S021	UINT			R/W	0	HOUR	Time band hours
168	1	C020	UINT(5..999)			R/W	720	MINUTE	C020 - Circuit destabilisation max time with one or more comp. OFF
169	1	C021	USINT(0..1)			R/W	0		C021 - Circuit capacity distribution (0=Equalised, 1=Grouped)
170	2	C022	REAL			R/W	0	DELTAKELVIN	C022 - Discharge temp. probe offset for circ.1
172	2	C023	REAL			R/W	0	DELTAKELVIN	C023 - Suction temp. probe offset for circ.1
174	2	C024	REAL			R/W	0	DELTAKELVIN	C024 - Discharge temp. probe offset for circ.2
176	2	C025	REAL			R/W	0	DELTAKELVIN	C025 - Suction temp. probe offset for circ.2
178	2	C026	REAL			R/W	0	BAR	C026 - Discharge press. probe offset for circ.1
180	2	C027	REAL			R/W	0	BAR	C027 - Suction press. probe offset for circ.1
182	2	C028	REAL			R/W	0	DELTAKELVIN	C028 - Cond. temp. probe offset for circ.1
184	2	C029	REAL			R/W	0	DELTAKELVIN	C029 - Evap. temp. probe offset for circ.1
186	2	C030	REAL			R/W	0	BAR	C030 - Discharge press. probe offset for circ.2
188	2	C031	REAL			R/W	0	BAR	C031 - Suction press. probe offset for circ.2
190	2	C032	REAL			R/W	0	DELTAKELVIN	C032 - Cond. temp. probe offset for circ.2
192	2	C033	REAL			R/W	0	DELTAKELVIN	C033 - Evap. temp. probe offset for circ.2
194	1	C037	USINT(0..1)			R/W	0		C037 - Suction press. probe type (0=0..5V, 1=4..20mA)
195	2	C038	REAL			R/W	0	BAR	C038 - Suction press. probe min value
197	2	C039	REAL			R/W	17.3	BAR	C039 - Suction press. probe max value
199	1	C040	USINT(0..1)			R/W	0		C040 - Discharge press. probe type (0=0..5V, 1=4..20mA)
200	2	C041	REAL			R/W	0	BAR	C041 - Discharge press. probe min value
202	2	C042	REAL			R/W	45	BAR	C042 - Discharge press. probe max value
204	1	C043	USINT(0..1)			R/W	1		C043 - Discharge temp. probe type (0=NTC, 1=NTC-HT)
206	1	C046	USINT(1..2)			R/W	1		C046 - Number of circuit in the unit
207	1	C047	USINT	2	3	R/W	2		C047 - Type of compressors used (0=1 ON/OFF, 1=2 ON/OFF, 2=BLDC, 3=BLDC + ON/OFF)
208	1	C048	USINT(1..2)			R/W	1		C048 - Compressor rotation type (1=FIFO, 2=TIME)
209	1	S000	UINT(0..999)			R/W	99	HOUR	S000 - Source pump 1 maintenance hour threshold (x100)
210	1	S002	UINT(0..2)			R/W	0		S002 - Source pump 1 manual mode (0=AUTO, 1=OFF, 2=ON)
212	1	S022	UINT			R/W	0	MINUTE	Time band minutes
213	1	S072	USINT(0..2)			R/W	0		S072 - Source pump activation (0=always on, 1=on with compressor, 2=modulate on discharge)
214	1	S008	UINT(0..999)			R/W	99	HOUR	S008 - Source fan 1 circ.1 maintenance hour threshold (x100)
215	1	S010	USINT(0..2)			R/W	0		S010 - Source fan ON/OFF circ.1 manual mode (0=AUTO, 1=OFF, 2=ON)
216	1	S011	USINT(0..101)			R/W	0	PERCENT	S011 - Source fan inverter circ.1 manual mode (0=AUTO, 1=0%, 2=1%, .. 101=100%)
217	1	S012	UINT(0..999)			R/W	0	HOUR	S012 - Source fan 1 circ.2 maintenance hour threshold (x100)
218	1	S014	USINT(0..2)			R/W	0		S014 - Source fan ON/OFF circ.2 manual mode (0=AUTO, 1=OFF, 2=ON)
219	1	S015	USINT(0..101)			R/W	0	PERCENT	S015 - Source fan inverter circ.2 manual mode (0=AUTO, 1=0%, 2=1%, .. 101=100%)
220	2	S016	REAL			R/W	-5	CELSIUS	S016 - Source fan temp. threshold for cold climates
222	2	S017	REAL			R/W	10	PERCENT	S017 - Source fan min speed for cold climates
224	2	S018	REAL			R/W	50	PERCENT	S018 - Source fan speed up speed for cold climates
226	1	S019	UINT(0..300)			R/W	5	SECOND	S019 - Source fan speed up time for cold climates
229	2	Sprb	REAL			R	0	CELSIUS	SPrb - Source external air temperature
231	2	S025	REAL			R/W	45	CELSIUS	S025 - Low noise source fan set point in cooling
233	1	S026	UINT(0..999)			R/W	30	SECOND	S026 - Comp. ON delay after source pump ON
234	1	S027	UINT(0..999)			R/W	10	SECOND	S027 - Source pump delay OFF from comp. OFF
235	2	S028	REAL			R/W	30	CELSIUS	S028 - Source device cool set point
237	2	S029	REAL			R/W	10	CELSIUS	S029 - Source device heat set point
239	1	U081	USINT(0..7)			R/W	0		U081 - Pressure alarm reset configuration
240	1	Hc71	USINT(0..3)			R/W	1		Hc71 - Analogue output 1 config. (0= Not used, 1=Source pump - Source fan on/off, 2=Source fan mod, 3=Free cooling valve)
241	2	S031	REAL			R/W	45	CELSIUS	S031 - Source fan cool set point at startup
243	1	S032	UINT(0..999)			R/W	240	SECOND	S032 - Source fan cool startup delay
244	1	Hc81	USINT(0..2)			R/W	1		Hc81 - Analogue output 1 secondary config. (0= Not used, 1=Source fan on/off, 2=Source fan mod)
245	1	Hc72	USINT(0..3)			R/W	1		Hc72 - Analogue output 2 config. (0= Not used, 1=Source pump - Source fan on/off, 2=Source fan mod, 3=Free cooling valve)
246	2	S034	REAL			R/W	15	DELTAKELVIN	S034 - Source device cool differential
248	2	S035	REAL			R/W	5	DELTAKELVIN	S035 - Source device heat differential
250	2	S036	REAL			R/W	20	PERCENT	S036 - Source fan inverter min speed
252	2	S037	REAL			R/W	80	PERCENT	S037 - Source fan inverter max speed
254	2	S039	REAL			R/W	-1	CELSIUS	S039 - Defrost start threshold
256	2	S040	REAL			R/W	1	CELSIUS	S040 - Defrost start threshold reset
258	1	S041	UINT(0..999)			R/W	30	MINUTE	S041 - Defrost start delay
259	2	S042	REAL			R/W	52	CELSIUS	S042 - Defrost end threshold
261	1	S044	UINT(0..999)			R/W	20	SECOND	S044 - Defrost begin delay before actuating the 4 way valve
262	1	S045	UINT(0..999)			R/W	30	SECOND	S045 - Defrost ending delay after actuating the 4 way valve
263	1	S046	UINT(0..99)			R/W	1	MINUTE	S046 - Defrost min duration
264	1	S047	UINT(0..99)			R/W	5	MINUTE	S047 - Defrost max duration
265	1	S048	UINT(0..999)			R/W	90	SECOND	S048 - Dripping duration
266	1	S049	UINT(0..999)			R/W	30	SECOND	S049 - Post dripping duration
267	1	S050	UINT(0..999)			R/W	20	MINUTE	S050 - Delay between defrosts
268	1	C049	UINT(0..999)			R/W	90	SECOND	C049 - Low pressure alarm start delay
269	1	C050	UINT(0..999)			R/W	15	SECOND	C050 - Low pressure alarm run delay
270	1	F024	USINT			R/W	0		F024 - Heater 1 manual mode (0=AUTO, 1=OFF, 2=ON)
271	1	F025	USINT			R/W	0		F025 - Heater 2 manual mode (0=AUTO, 1=OFF, 2=ON)
272	1	S053	USINT(0..2)			R/W	0		S053 - Defrost synchronisation type (0=Independent, 1=Separate, 2=Simultaneous)
274	2	S054	REAL			R/W	3	BAR	S054 - Delta press. to reverse the 4 way valve

## MAPPING TABLES

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	Init Value	UoM	Description
276	1	Hc82	USINT(0..2)			R/W	1		Hc82 - Analogue output 2 secondary config. (0= Not used, 1=Source fan on/off, 2=Source fan mod)
277	1	Al_CfgLimMax_Grp3	USINT			R/W	9		Al_CfgLimMax_Grp3 - Lim max probe group 3
278	1	S056	UINT(20..999)			R/W	20	SECOND	S056 - Duration of smart start function
279	2	S057	REAL			R/W	-0.8	CELSIUS	S057 - Source frost alarm threshold
281	2	S058	REAL			R/W	30	DELTAKELVIN	S058 - Source frost alarm differential
283	1	S059	UINT(0..999)			R/W	30	SECOND	S059 - Source frost alarm delay time at 1K below threshold
284	2	S060	REAL			R/W	0	DELTAKELVIN	S060 - Source external air temperature offset
286	1	Hc00	USINT	0	4	R/W	1		Hc00 - Analogue input 3 config. (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Return water temp. from user, 8= Delivery water temp. to user)
287	1	Al_CfgLimMax_Grp3_Slv	USINT			R/W	11		Al_CfgLimMax_Grp3 - Lim max probe group 3 secondary
288	1	Hc03	USINT	0	2	R/W	0		Hc03 - Analogue input 6 config. (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Remote set point, 4= Discharge temp., 5= Condensing temp., 6= Suction temp., 7= Evaporation temp., 8= Condensing press., 9= Evaporating press., 10= Return water temp. from user, 11= Delivery water temp. to user, 12= Capacity request from AIN)
289	1	Hc04	USINT	0	1	R/W	0		Hc04 - Analogue input 7 config. (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Return water temp. from user, 8= Delivery water temp. to user)
290	1	Hc05	USINT	0	1	R/W	0		Hc05 - Analogue input 6 config. on Secondary board (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Remote set point, 4= Discharge temp., 5= Condensing temp., 6= Suction temp., 7= Evaporation temp., 8= Condensing press., 9= Evaporating press., 10= Common delivery temp., 11= Delivery water evap.2 temp., 12= Capacity request from AIN)
291	1	Hc06	USINT	0	6	R/W	1		Hc06 - Digital input 4 config. (0=Not used, 1=User flow switch, 2=Comp.1 circ.1 overload, 3=Comp.2 circ.1 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 1, 12=Remote cmd 2, 13=Source alarm)
292	1	Hc07	USINT	0	6	R/W	5		Hc07 - Digital input 5 config. (0=Not used, 1=User flow switch, 2=Comp.1 circ.1 overload, 3=Comp.2 circ.1 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 1, 12=Remote cmd 2, 13=Source alarm)
293	1	Hc08	USINT	0	6	R/W	4		Hc08 - Digital input 6 config. (0=Not used, 1=User flow switch, 2=Comp.1 circ.1 overload, 3=Comp.2 circ.1 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 1, 12=Remote cmd 2, 13=Source alarm)
294	1	Hc09	USINT	0	5	R/W	0		Hc09 - Digital input 4 config. on Secondary board (0=Not used, 1=User flow switch, 2=Comp.1 circ.2 overload, 3=Comp.2 circ.2 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 3, 12=Remote cmd 4, 13=Source alarm)
295	1	Hc10	USINT	0	5	R/W	0		Hc10 - Digital input 5 config. on Secondary board (0=Not used, 1=User flow switch, 2=Comp.1 circ.2 overload, 3=Comp.2 circ.2 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 3, 12=Remote cmd 4, 13=Source alarm)
296	1	Hc11	USINT	0	5	R/W	0		Hc11 - Digital input 6 config. on Secondary board (0=Not used, 1=User flow switch, 2=Comp.1 circ.2 overload, 3=Comp.2 circ.2 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 3, 12=Remote cmd 4, 13=Source alarm)
297	1	Hc14	USINT			R/W	1		Hc14 - Digital input 1 config. (0=Not used, 1=User flow switch, 2=Comp.1 circ.1 overload, 3=Comp.2 circ.1 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 1, 12=Remote cmd 2, 13=Source alarm)
298	1	Hc15	USINT			R/W	2		Hc15 - Digital input 2 config. (0=Not used, 1=User flow switch, 2=Comp.1 circ.1 overload, 3=Comp.2 circ.1 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 1, 12=Remote cmd 2, 13=Source alarm)

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	Init Value	UoM	Description
299	1	Hc16	USINT			R/W	0		Hc16 - Digital input 1 config. on Secondary board (0=Not used, 1=User flow switch, 2=Comp.1 circ.2 overload, 3=Comp.2 circ.2 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 3, 12=Remote cmd 4, 13=Source alarm)
300	1	Hc17	USINT			R/W	0		Hc17 - Digital input config. on Secondary board (0=Not used, 1=User flow switch, 2=Comp.1 circ.2 overload, 3=Comp.2 circ.2 overload, 4=Remote ON/OFF, 5=Cool/Heat, 6=2nd set point, 7=Remote alarm, 8=User pump 1 overload, 9=LP pressure switch, 10=User pump 2 overload, 11=Remote cmd 3, 12=Remote cmd 4, 13=Source alarm)
301	1	Al_CfgLimMax_Grp2	USINT			R/W	8		Al_CfgLimMax_Grp2 - Lim max probe group 2
302	1	He00	UINT(0..9999)			R/W	1		He00 - USER profile password
303	1	He01	UINT(0..9999)			R/W	0		He01 - SERVICE profile password
304	1	He02	UINT(0..9999)			R/W	1234		He02 - MANUFACTURER profile password
305	2	Hd04	STRING[4]			R/W	0		Hd04 - NFC password
307	2	SEtC	REAL			R/W	7	CELSIUS	SEtC - Cool set point
309	2	SEtH	REAL			R/W	40	CELSIUS	SEtH - Heat set point
311	1	Al_CfgLimMax_Grp1	USINT			R/W	8		Al_CfgLimMax_Grp1 - Lim max probe group 1
324	2	C017	REAL			R/W	65	CELSIUS	C017 - Threshold of max high pressure (HP)
326	2	C018	REAL			R/W	0.2	BAR	C018 - Threshold of min low pressure (LP)
328	1	E047	USINT(0..2)			R/W	0		E047 - Type of ExV driver (0= Disabled, 1= EVD embedded, 2=EVD EVO)
331	2	BMS_PwrReq	REAL					PERCENT	Capacity request using BMS net
335	2	P000	REAL			R/W	-25	CELSIUS	P000 - Evaporating min temp. custom envelope limit
337	2	P001	REAL			R/W	70	CELSIUS	P001 - Condensing max temp. custom envelope limit
339	1	P002	UINT(0..999)			R/W	15	SECOND	P002 - Prevent min duration
340	1	P003	UINT(0..999)			R/W	120	SECOND	P003 - Out of envelope alarm delay time
341	1	P004	UINT(0..999)			R/W	60	SECOND	P004 - Low pressure difference alarm delay
342	2	P005	REAL			R/W	35	RPS	P005 - Circuit destabilisation min BLDC speed threshold
344	2	P006	REAL			R/W	35	PERCENT	P006 - Oil recovery min request for activation
346	2	P007	REAL			R/W	35	RPS	P007 - Oil recovery min comp. speed for activation
348	1	P008	UINT(0..999)			R/W	15	MINUTE	P008 - Oil recovery time before activation in which the comp. can run at min speed
349	1	P009	UINT(0..999)			R/W	3	MINUTE	P009 - Oil recovery duration in which the comp. speed is forced
350	2	P010	REAL			R/W	50	RPS	P010 - Oil recovery comp. speed in which the comp. is forced
352	1	P011	UINT(0..999)			R/W	30	SECOND	P011 - Oil equalisation startup time for solenoid valve on comp. starts
353	1	P012	UINT(0..999)			R/W	3	SECOND	P012 - Oil equalisation solenoid valve open time
354	1	P013	UINT(0..999)			R/W	1	MINUTE	P013 - Oil equalisation solenoid valve min off time
355	1	P014	UINT(0..999)			R/W	20	MINUTE	P014 - Oil equalisation solenoid valve max off time
356	1	P015	UINT(0..999)			R/W	20	MINUTE	P015 - Oil equalisation max time for management
357	1	P019	USINT(0..101)			R/W	0	PERCENT	P019 - Compressor 1 circuit 1 manual mode (0=AUTO, 1=0%, ... 101=100%)
358	1	P020	USINT(0..101)			R/W	0	PERCENT	P020 - Compressor 1 circuit 2 manual mode (0=AUTO, 1=0%, ... 101=100%)
359	2	P021	REAL			R/W	0	KILOPASCAL	P021 - Max permitted Delta P to start up
361	1	P022	UINT			R/W	0	SECOND	P022 - Max EVD pre-opening time to equalise pressure
362	1	P023	UINT			R/W	0	PERCENT	P023 - EVD pre-opening in case of pre-start to equalise pressure
363	2	P024	REAL			R/W	0	RPS	P024 - Start-up speed
365	2	P025	REAL			R/W	0	RPS	P025 - Max custom speed (rps)
367	2	P026	REAL			R/W	0	RPS	P026 - Min custom speed (rps)
369	2	P027	REAL			R/W	45	PERCENT	P027 - BLDC speed request threshold % to call on
371	2	P028	REAL			R/W	90	PERCENT	P028 - BLDC speed threshold to call on fixed speed compressor
373	2	P029	REAL			R/W	30	PERCENT	P029 - BLDC speed threshold to switch off fixed speed compressor
375	2	P030	REAL			R/W	0		P030 - Skip frequency: set 1 [010]
377	2	P031	REAL			R/W	0		P031 - Skip frequency: band 1 [011]
379	1	P032	UINT			R/W	0		P032 - Enable motor overtemperature alarm (PTC) (0=OFF, 1=ON) [027]
380	1	P033	UINT			R/W	0		P033 - Motor overtemperature alarm delay [028]
382	2	S051	REAL			R/W	80	RPS	S051 - BLDC defrost speed
384	2	S052	REAL			R/W	40	RPS	S052 - BLDC cycle reverse speed in defrost
386	40	Ha01	STRING			R/W	0		New time zone to set for the controller's internal clock
705	2	E048	REAL			R/W	1	DELTAKELVIN	E048 - RESERVED, Delta evap. temp. (Smart opening ExV)
707	2	E049	REAL			R/W	0.2	DELTAKELVIN	E049 - RESERVED, Delta suction temp. (Smart opening ExV)
709	1	U079	UINT(1..15)			R/W	3	MINUTE	U079 - Burst funct. time for unit pump on
710	1	U080	UINT(3..99)			R/W	15	MINUTE	U080 - Burst funct. time for unit pump off
711	2	F009	REAL			R/W	14	CELSIUS	F009 - Delivery air min. temp. threshold
713	2	F010	REAL			R/W	4	DELTAKELVIN	F010 - Delivery limit proportional band
715	1	ID_CfgLimMax_Slv	USINT			R/W	0		ID_CfgLimMax_Slv - Lim digital input
716	2	F012	REAL			R/W	1	DELTAKELVIN	F012 - Heater offset in cool
718	2	F013	REAL			R/W	0.5	DELTAKELVIN	F013 - Heater differential in cool
720	2	F014	REAL			R/W	3	DELTAKELVIN	F014 - Heater offset in heat
722	2	F015	REAL			R/W	1	DELTAKELVIN	F015 - Heater differential in heat
724	2	F018	REAL			R/W	40	CELSIUS	F018 - Hot-Start set point
726	2	F019	REAL			R/W	5	DELTAKELVIN	F019 - Hot-Keep differential
728	2	F021	REAL			R/W	0	DELTAKELVIN	F021 - Common delivery user water temp. probe offset
730	2	F022	REAL			R/W	0	DELTAKELVIN	F022 - Evap.2 frost temp. probe offset



## MAPPING TABLES

Index	Size	Acronym	Data Type	Min Value	Max Value	R/W	Init Value	UoM	Description
732	2	S070	REAL			R/W	0	DELTAKELVIN	S070 - Cond.1 frost temp. probe offset
734	2	S071	REAL			R/W	0	DELTAKELVIN	S071 - Cond.2 frost temp. probe offset
736	2	S069	REAL			R/W	0	CELSIUS	S069 - Temperature set point for fan-defrost function (0=Function disabled)
738	2	UsrDlvW-Temp_FromMst	REAL					CELSIUS	Delivery water temperature to user received from Main (Single evaporator)
740	1	Hc51	USINT(0..11)			R/W	1		Hc51 - Digital output 1 config. (0= Not used, 1=Comp. 1 circ. 1, 2=Comp. 2 circ. 1, 3=User heater step 1, 4=User pump 1, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve, 9=Freecooling valve, 10=General alarm, 11=User pump 2)
741	1	Hc52	USINT(0..11)			R/W	1		Hc52 - Digital output 2 config. (0= Not used, 1=Comp. 1 circ. 1, 2=Comp. 2 circ. 1, 3=User heater step 1, 4=User pump 1, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve, 9=Freecooling valve, 10=General alarm, 11=User pump 2)
742	1	Hc53	USINT(0..11)			R/W	1		Hc53 - Digital output 3 config. (0= Not used, 1=Comp. 1 circ. 1, 2=Comp. 2 circ. 1, 3=User heater step 1, 4=User pump 1, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve, 9=Freecooling valve, 10=General alarm, 11=User pump 2)
743	1	Hc54	USINT(0..11)			R/W	1		Hc54 - Digital output 4 config. (0= Not used, 1=Comp. 1 circ. 1, 2=Comp. 2 circ. 1, 3=User heater step 1, 4=User pump 1, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve, 9=Freecooling valve, 10=General alarm, 11=User pump 2)
744	1	Hc55	USINT(0..11)			R/W	1		Hc55 - Digital output 5 config. (0= Not used, 1=Comp. 1 circ. 1, 2=Comp. 2 circ. 1, 3=User heater step 1, 4=User pump 1, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve, 9=Freecooling valve, 10=General alarm, 11=User pump 2)
745	1	Hc56	USINT(0..11)			R/W	1		Hc56 - Digital output 6 config. (0= Not used, 1=Comp. 1 circ. 1, 2=Comp. 2 circ. 1, 3=User heater step 1, 4=User pump 1, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve, 9=Freecooling valve, 10=General alarm, 11=User pump 2)
746	1	Hc61	USINT(0..8)			R/W	1		Hc61 - Digital output 1 secondary config. (0= Not used, 1=Comp. 1 circ. 2, 2=Comp. 2 circ. 2, 3=User heater step 2, 4=User pump 2, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve)
747	1	Hc62	USINT(0..8)			R/W	1		Hc62 - Digital output 2 secondary config. (0= Not used, 1=Comp. 1 circ. 2, 2=Comp. 2 circ. 2, 3=User heater step 2, 4=User pump 2, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve)
748	1	Hc63	USINT(0..8)			R/W	1		Hc63 - Digital output 3 secondary config. (0= Not used, 1=Comp. 1 circ. 2, 2=Comp. 2 circ. 2, 3=User heater step 2, 4=User pump 2, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve)
749	1	Hc64	USINT(0..8)			R/W	1		Hc64 - Digital output 4 secondary config. (0= Not used, 1=Comp. 1 circ. 2, 2=Comp. 2 circ. 2, 3=User heater step 2, 4=User pump 2, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve)
750	1	Hc65	USINT(0..8)			R/W	1		Hc65 - Digital output 5 secondary config. (0= Not used, 1=Comp. 1 circ. 2, 2=Comp. 2 circ. 2, 3=User heater step 2, 4=User pump 2, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve)
751	1	Hc66	USINT(0..8)			R/W	1		Hc66 - Digital output 6 secondary config. (0= Not used, 1=Comp. 1 circ. 2, 2=Comp. 2 circ. 2, 3=User heater step 2, 4=User pump 2, 5=Source, 6=Frost heater, 7=4way valve, 8=Oil equal. valve)
752	1	Hc31	USINT			R/W	0		Hc31 - Analogue input 1 config. (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Return water temp. from user, 8= Delivery water temp. to user)
753	1	Hc32	USINT			R/W	0		Hc32 - Analogue input 2 config. (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Return water temp. from user, 8= Delivery water temp. to user)
754	1	Hc34	USINT			R/W	0		Hc34 - Analogue input 4 config. (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Condensing press., 8= Evaporating press., 9= Return water temp. from user, 10= Delivery water temp. to user)
755	1	Hc35	USINT			R/W	0		Hc35 - Analogue input 5 config. (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Condensing press., 8= Evaporating press., 9= Return water temp. from user, 10= Delivery water temp. to user)
756	1	Hc41	USINT			R/W	0		Hc41 - Analogue input 1 config. on Secondary board (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Common delivery temp., 8= Delivery water evap.2 temp.)
757	1	Hc42	USINT			R/W	0		Hc42 - Analogue input 2 config. on Secondary board (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Common delivery temp., 8= Delivery water evap.2 temp.)

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	Init Value	UoM	Description
758	1	Hc43	USINT			R/W	0		Hc43 - Analogue input 3 config. on Secondary board (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7=Common delivery temp., 8= Delivery water evap.2 temp.)
759	1	Hc44	USINT			R/W	0		Hc44 - Analogue input 4 config. on Secondary board (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Condensing press., 8= Evaporating press., 9= Common delivery temp., 10= Delivery water evap.2 temp.)
760	1	Hc45	USINT			R/W	0		Hc45 - Analogue input 5 config. on Secondary board (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7= Condensing press., 8= Evaporating press., 9= Common delivery temp., 10= Delivery water evap.2 temp.)
761	1	Hc47	USINT			R/W	0		Hc47 - Analogue input 7 config. on Secondary board (0= Not used, 1= Source water delivery temp., 2= Outside temp., 3= Discharge temp., 4= Condensing temp., 5= Suction temp., 6= Evaporation temp., 7=Common delivery temp., 8= Delivery water evap.2 temp.)
762	1	Al_CfgLim-Max_Grp2_Slv	USINT			R/W	10		Al_CfgLimMax_Grp2 - Lim max probe group 2 secondary
763	1	Al_CfgLim-Max_Grp1_Slv	USINT			R/W	8		Al_CfgLimMax_Grp1 - Lim max probe group 1 secondary
764	1	UnitTyp_Lim-Max	USINT			R/W	4		UnitTyp_LimMax - Lim max unit type
765	2	U084	REAL			R/W	23	CELSIUS	U084 - Automatic changeover threshold (type 1) (°C)
767	2	SEtU	REAL			R/W	23	CELSIUS	SEtU - Automatic changeover set point (type 2,3) (°C)
769	1	U088	USINT(0..2)			R/W	0		U088 - Frost heater position
770	2	F026	REAL			R/W	-40	CELSIUS	F026 - Compressor cut-off by outside temperature
772	2	U085	REAL			R/W	2	DELTAKELVIN	U085 - Automatic changeover deadband (°C)
774	2	U086	REAL			R/W	5	CELSIUS	U086 - Automatic changeover set point low limit (°C)
776	2	U087	REAL			R/W	20	CELSIUS	U087 - Automatic changeover set point high limit (°C)
818	2	U090	REAL			R/W	0	PERCENT	U090 - Analogue capacity request offset
820	2	U091	REAL			R/W	0	PERCENT	U091 - Analogue capacity request min value
822	2	U092	REAL			R/W	100	PERCENT	U092 - Analogue capacity request max value
817	1	U089	USINT(0..2)			R/W	0		U089 - Analogue capacity request input type (0=0-5V, 1=0-10V, 2=4-20mA)
788	1	Hc90	USINT	0	8	R/W	0		HC90 - Display value selection - Large area
789	1	Hc91	USINT	0	8	R/W	0		HC91 - Display value selection - Small area

## Input Register

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	Init Value	UoM	Description
0	2	HuP1	UDINT			R	0	HOUR	HuP1 - User pump 1 operating hours
2	2	HuP2	UDINT			R	0	HOUR	HuP2 - User pump 2 operating hours
4	2	H1C1	UDINT			R	0	HOUR	H1C1 - Comp.1 circ.1 operating hours
6	2	H1C2	UDINT			R	0	HOUR	H1C2 - Comp.2 circ.1 operating hours
8	2	H2C1	UDINT			R	0	HOUR	H2C1 - Comp.1 circ.2 operating hours
10	2	H2C2	UDINT			R	0	HOUR	H2C2 - Comp.2 circ.2 operating hours
12	2	dSt1	REAL			R	0	CELSIUS	dSt1 - Discharge temp. probe on circ.1
14	2	Sct1	REAL			R	0	CELSIUS	Sct1 - Suction temp. on circ.1
16	2	dSt2	REAL			R	0	CELSIUS	dSt2- Discharge temp. probe on circ.2
18	2	Sct2	REAL			R	0	CELSIUS	Sct2 - Suction temp. on circ.2
20	2	dSP1	REAL			R	0	BAR	dSP1 - Discharge press. probe on circ.1
22	2	ScP1	REAL			R	0	BAR	ScP1 - Suction press. on circ.1
24	2	Cnd1	REAL			R	0	CELSIUS	Cnd1 - Cond. temp. probe (or press. probe converted value) on circ.1
26	2	EuP1	REAL			R	0	CELSIUS	EuP1 - Evap. temp. probe (or press. probe converted value) on circ.1
28	2	dSP2	REAL			R	0	BAR	dSP2 - Discharge press. probe on circ.2
30	2	ScP2	REAL			R	0	BAR	ScP2 - Suction press. on circ.2
32	2	Cnd2	REAL			R	0	CELSIUS	Cnd2 - Cond. temp. probe (or press. probe converted value) on circ.2
34	2	EuP2	REAL			R	0	CELSIUS	EuP2 - Evap. temp. probe (or press. probe converted value) on circ.2
36	2	HSP1	UDINT			R	0	HOUR	HSP1 - Source pump 1 operating hours
38	1	C045	UINT			R	0		C045 - Refrigerant type (3=R407C, 4=R410a, 6=R290, 10=R744, 22=R32)
39	1	UnitCompTyp_Lim-Max	USINT			R	0		UnitCompTyp_LimMax - Limit max of UnitCompTyp variable
40	2	HFn1	UDINT			R	0	HOUR	HFn1 - Source fan 1 circ.1 operating hours
42	2	HFn2	UDINT			R	0	HOUR	HFn2 - Source fan 1 circ.2 operating hours
46	2	SEtA	REAL			R	0	CELSIUS	SEtA - Actual set point used by temp. control
48	2	SSH1	REAL			R	0	DELTAKELVIN	SSH1 - Suction superheat on circ.1
50	1	Opn1	UINT			R	0	PERCENT	Opn1 - EEV position on circ.1
51	2	SSH2	REAL			R	0	DELTAKELVIN	SSH2 - Suction superheat on circ.2
53	1	Opn2	UINT			R	0	PERCENT	Opn2 - EEV position on circ.2
54	2	rUSr	REAL			R	0	CELSIUS	rUSr - Return water temp. from user
56	2	dUSr	REAL			R	0	CELSIUS	dUSr - Delivery water temperature to user

## MAPPING TABLES

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	Init Value	UoM	Description
58	1	PwrReq_MC	USINT			R	0	PERCENT	PwrReq_MC - MC capacity request
59	1	PwrOut_MC	USINT			R	0	PERCENT	PwrOut_MC - MC output capacity
65	2	Fan1Req	REAL			R	0	PERCENT	Fan1Req - Inverter request source fan circ.1
67	2	Fan2Req	REAL			R	0	PERCENT	Fan2Req - Inverter request source fan circ.2
69	2	WoutMixVlv	REAL			R			Water output mixing valve (from tank)
71	1	UnitStatus	USINT			R	0		UnitStatus - Unit status (0=OFF from remote DI, 1=OFF from keypad, 2=OFF from scheduler, 3=OFF from BMS, 4=OFF from CH/HP changeover mode, 5=OFF from alarm, 6=Unit defrosting, 7=Unit ON, 8=Manual mode)
72	2	Comp1Circ1HrsR	UDINT			R	0	HOUR	Comp1Circ1HrsR - Comp.1 circ.1 operating hours (partial)
74	2	Comp2Circ1HrsR	UDINT			R	0	HOUR	Comp2Circ1HrsR - Comp.2 circ.1 operating hours (partial)
76	2	SrcFan1Circ1HrsR	UDINT			R	0	HOUR	SrcFan1Circ1HrsR - Source fan 1 circ.1 operating hours (partial)
78	1	FrcCompDestabil_Circ1	UINT			R			Destabilisation status for circ.1 (0=No comp. forcing request, 1=Check if forcing is possible, 2=Enable to force comp., 3=Wait status)
79	1	FrcCompDestabil_Circ2	UINT			R			Destabilisation status for circ.2 (0=No comp. forcing request, 1=Check if forcing is possible, 2=Enable to force comp., 3=Wait status)
90	2	rSpt	REAL			R/W	0	CELSIUS	rSpt - Remote set point
92	2	PwrReq	REAL			R	0	PERCENT	PwrReq - Power request
96	2	SrcSetP_Circ1	REAL			R	0	CELSIUS	SrcSetP_Circ1 - Source fan circ.1 set point
98	2	SrcSetP_Circ2	REAL			R	0	CELSIUS	SrcSetP_Circ2 - Source fan circ.2 set point
100	2	rps1	REAL			R	0	RPS	rps1 - Actual rotor speed coming from inverter
102	2	Mc1	REAL			R	0	AMPERE	Mc1 - Current motor current [A]
104	2	MP1	REAL			R	0	KILOWATT	MP1 - Current motor consumption [kW]
106	2	Drt1	REAL			R	0	CELSIUS	Drt1 - Current drive temperature [°C]
108	1	AlHs1_1	UINT			R	0		PSD circuit 1: the last alarm log
109	1	AlHs2_1	UINT			R	0		PSD circuit 1: the last-but-1st alarm log
110	1	AlHs3_1	UINT			R	0		PSD circuit 1: the last-but-2nd alarm log
111	1	AlHs4_1	UINT			R	0		PSD circuit 1: the last-but-3rd alarm log
112	2	DxPwrReq	REAL			R		PERCENT	Direct expansion capacity request
114	1	MotTyp	UINT			R	0		MotTyp - BLDC circ.1 Carel Database ID
115	1	EnvelopeZone_Circ1	USINT			R	0		EnvelopeZone_Circ1 - Envelope zone circ.1
116	2	EnvPnt_X1	REAL			R	0	CELSIUS	EnvPnt_X1 - Envelope point
118	2	EnvPnt_Y1	REAL			R	0	CELSIUS	EnvPnt_Y1 - Envelope point
120	2	EnvPnt_X2	REAL			R	0	CELSIUS	EnvPnt_X2 - Envelope point
122	2	EnvPnt_Y2	REAL			R	0	CELSIUS	EnvPnt_Y2 - Envelope point
124	2	EnvPnt_X3	REAL			R	0	CELSIUS	EnvPnt_X3 - Envelope point
126	2	EnvPnt_Y3	REAL			R	0	CELSIUS	EnvPnt_Y3 - Envelope point
128	2	EnvPnt_X4	REAL			R	0	CELSIUS	EnvPnt_X4 - Envelope point
130	2	EnvPnt_Y4	REAL			R	0	CELSIUS	EnvPnt_Y4 - Envelope point
132	2	EnvPnt_X5	REAL			R	0	CELSIUS	EnvPnt_X5 - Envelope point
134	2	EnvPnt_Y5	REAL			R	0	CELSIUS	EnvPnt_Y5 - Envelope point
136	2	EnvPnt_X6	REAL			R	0	CELSIUS	EnvPnt_X6 - Envelope point
138	2	EnvPnt_Y6	REAL			R	0	CELSIUS	EnvPnt_Y6 - Envelope point
140	2	EnvPnt_X7	REAL			R	0	CELSIUS	EnvPnt_X7 - Envelope point
142	2	EnvPnt_Y7	REAL			R	0	CELSIUS	EnvPnt_Y7 - Envelope point
144	2	EnvPnt_X8	REAL			R	0	CELSIUS	EnvPnt_X8 - Envelope point
146	2	EnvPnt_Y8	REAL			R	0	CELSIUS	EnvPnt_Y8 - Envelope point
148	1	EnvelopeZone_Circ2	USINT			R	0		EnvelopeZone_Circ2 - Envelope zone circ.2
149	2	EnvPnt2_X1	REAL			R	0	CELSIUS	EnvPnt2_X1 - Envelope point
151	2	EnvPnt2_Y1	REAL			R	0	CELSIUS	EnvPnt2_Y1 - Envelope point
153	2	EnvPnt2_X2	REAL			R	0	CELSIUS	EnvPnt2_X2 - Envelope point
155	2	EnvPnt2_Y2	REAL			R	0	CELSIUS	EnvPnt2_Y2 - Envelope point
157	2	EnvPnt2_X3	REAL			R	0	CELSIUS	EnvPnt2_X3 - Envelope point
159	2	EnvPnt2_Y3	REAL			R	0	CELSIUS	EnvPnt2_Y3 - Envelope point
161	2	EnvPnt2_X4	REAL			R	0	CELSIUS	EnvPnt2_X4 - Envelope point
163	2	EnvPnt2_Y4	REAL			R	0	CELSIUS	EnvPnt2_Y4 - Envelope point
165	2	EnvPnt2_X5	REAL			R	0	CELSIUS	EnvPnt2_X5 - Envelope point
167	2	EnvPnt2_Y5	REAL			R	0	CELSIUS	EnvPnt2_Y5 - Envelope point
169	2	EnvPnt2_X6	REAL			R	0	CELSIUS	EnvPnt2_X6 - Envelope point
171	2	EnvPnt2_Y6	REAL			R	0	CELSIUS	EnvPnt2_Y6 - Envelope point
173	2	EnvPnt2_X7	REAL			R	0	CELSIUS	EnvPnt2_X7 - Envelope point
175	2	EnvPnt2_Y7	REAL			R	0	CELSIUS	EnvPnt2_Y7 - Envelope point
177	2	EnvPnt2_X8	REAL			R	0	CELSIUS	EnvPnt2_X8 - Envelope point
179	2	EnvPnt2_Y8	REAL			R	0	CELSIUS	EnvPnt2_Y8 - Envelope point
181	2	rps2	REAL			R	0	RPS	rps2 - Actual rotor speed coming from inverter
183	2	Mc2	REAL			R	0	AMPERE	Mc2 - Current motor current [A]
185	2	MP2	REAL			R	0	kW	MP2 - Current motor consumption [kW]
187	2	Drt2	REAL			R	0	CELSIUS	Drt2 - Current drive temperature [°C]
189	1	AlHs1_2	UINT			R	0		PSD circuit 2: the last alarm log
190	1	AlHs2_2	UINT			R	0		PSD circuit 2: the last-but-1st alarm log
191	1	AlHs3_2	UINT			R	0		PSD circuit 2: the last-but-2nd alarm log
192	1	AlHs4_2	UINT			R	0		PSD circuit 2: the last-but-3rd alarm log
193	1	MotTyp2	UINT			R	0		MotTyp2 - BLDC circ.2 Carel Database ID
203	1	EEV_Protection_Circ1	EEV_ProtectionStatus(1..5)			R	0		EEV_Protection_Circ1 - ExV protection status on circ.1 (1=NONE, 2=LOWSH, 3=LOP, 4=MOP, 5=HITCOND)
204	1	EEV_Protection_Circ2	EEV_ProtectionStatus(1..5)			R	0		EEV_Protection_Circ2 - ExV protection status on circ.2 (1=NONE, 2=LOWSH, 3=LOP, 4=MOP, 5=HITCOND)
205	1	EEV_Reg_Circ1	INT			R	0		EEV_Reg_Circ1 - ExV control status on circ.1
206	1	EEV_Reg_Circ2	INT			R	0		EEV_Reg_Circ2 - ExV control status on circ.2
207	2	AFE2	REAL			R	0	CELSIUS	AFE2 - Evap.2 frost temp.
209	2	cUSr	REAL			R	0	CELSIUS	User delivery common water temperature

Index	Size	Acronym	Data Type	Min Value	Max Value	R/W	InitValue	UoM	Description
51	1	A52	BOOL			R	FALSE		Circuit 2 - Discharge pressure probe broken or disconnected alarm
52	1	A53	BOOL			R	FALSE		Circuit 2 - Condensing temperature probe broken or disconnected alarm
53	1	A54	BOOL			R	FALSE		Circuit 2 - Suction pressure probe broken or disconnected alarm
54	1	A55	BOOL			R	FALSE		Circuit 2 - Evaporation temperature probe broken or disconnected alarm
55	1	A56	BOOL			R	FALSE		Circuit 2 - Discharge temperature probe broken or disconnected alarm
56	1	A57	BOOL			R	FALSE		Circuit 2 - Suction temperature probe broken or disconnected alarm
57	1	A58	BOOL			R	FALSE		Circuit 2 - High pressure alarm from pressure switch
58	1	A59	BOOL			R	FALSE		Circuit 2 - High pressure alarm from transducer
59	1	A60	BOOL			R	FALSE		Circuit 2 - Low pressure alarm from transducer
60	1	A61	BOOL			R	FALSE		Circuit 2 - Frost evaporation temperature alarm
61	1	A62	BOOL			R	FALSE		Circuit 2 - Low pressure alarm from pressure switch
62	1	A63	BOOL			R	FALSE		Circuit 2 - Overload compressor 1
63	1	A64	BOOL			R	FALSE		Circuit 2 - Overload compressor 2
64	1	A65	BOOL			R	FALSE		Circuit 2 - Compressor 1 maintenance
65	1	A66	BOOL			R	FALSE		Circuit 2 - Compressor 2 maintenance
66	1	A67	BOOL			R	FALSE		Circuit 2 - Source fan 1 maintenance
67	1	A68	BOOL			R	FALSE		Circuit 2 EVD - Low superheat (SH)
68	1	A69	BOOL			R	FALSE		Circuit 2 EVD - Low evaporation pressure (LOP)
69	1	A70	BOOL			R	FALSE		Circuit 2 EVD - Maximum evaporating pressure (MOP)
70	1	A71	BOOL			R	FALSE		Circuit 2 EVD - Valve motor error
71	1	A72	BOOL			R	FALSE		Circuit 2 EVD - Emergency closing
72	1	A73	BOOL			R	FALSE		Circuit 2 EVD - Incomplete valve closing
73	1	A74	BOOL			R	FALSE		Circuit 2 EVD - Offline
74	1	A75	BOOL			R	FALSE		Circuit 2 Envelope - General alarm + Zone alarm
75	1	A76	BOOL			R	FALSE		Circuit 2 BLDC - Delta pressure greater than the allowable at startup
76	1	A77	BOOL			R	FALSE		Circuit 2 BLDC - Starting failure
77	1	A78	BOOL			R	FALSE		Circuit 2 BLDC - Low differential pressure
78	1	A79	BOOL			R	FALSE		Circuit 2 BLDC - High discharge gas temperature
79	1	A80	BOOL			R	FALSE		Circuit 2 Inverter - Offline
80	1	A81	BOOL			R	FALSE		Circuit 2 Inverter - General alarm + Error code
81	1	PrevAFreeze_C1	BOOL			R	FALSE		PrevAFreeze_C1 - Prevent request for frost condition active inside circ.1
82	1	PrevHP_C1	BOOL			R	FALSE		PrevHP_C1 - Prevent request for high pressure condition active inside circ.1
83	1	PrevAFreeze_C2	BOOL			R	FALSE		PrevAFreeze_C2 - Prevent request for frost condition active inside circ.2
84	1	PrevHP_C2	BOOL			R	FALSE		PrevHP_C2 - Prevent request for high pressure condition active inside circ.2
92	1	Comp1Circ1_DevAlrm	BOOL			R	FALSE		Comp1Circ1_DevAlrm - Comp.1 circ.1 in alarm condition
93	1	Comp1Circ1_AbleToOn	BOOL			R	FALSE		Comp.1 circ.1 enabled to start
94	1	Comp1Circ1_AbleToOff	BOOL			R	FALSE		Comp.1 circ.1 enabled to stop
95	1	Comp1Circ1_FrcdOnByT	BOOL			R	FALSE		Comp.1 circ.1 forced ON by timings (min comp. ON)
96	1	Comp1Circ1_FrcdOffByT	BOOL			R	FALSE		Comp1Circ1_FrcdOffByT - Comp.1 circ.1 forced OFF by timings (min comp. OFF)
97	1	Comp2Circ1_DevAlrm	BOOL			R	FALSE		Comp2Circ1_DevAlrm - Comp.2 circ.1 in alarm condition
98	1	Comp2Circ1_AbleToOn	BOOL			R	FALSE		Comp.2 circ.1 enabled to start
99	1	Comp2Circ1_AbleToOff	BOOL			R	FALSE		Comp.2 circ.1 enabled to stop
100	1	Comp2Circ1_FrcdOnByT	BOOL			R	FALSE		Comp.2 circ.1 forced ON by timings (min comp. ON)
101	1	Comp2Circ1_FrcdOffByT	BOOL			R	FALSE		Comp.2 circ.1 forced OFF by timings (min comp. OFF)
102	1	Comp1Circ1_On	BOOL			R	FALSE		Comp1Circ1_On - Comp.1 circ.1 status (0=OFF, 1=ON)
103	1	Comp2Circ1_On	BOOL			R	FALSE		Comp2Circ1_On - Comp.2 circ.1 status (0=OFF, 1=ON)
104	1	Comp1Circ2_On	BOOL			R	FALSE		Comp1Circ2_On - Comp.1 circ.2 status (0=OFF, 1=ON)
105	1	Comp2Circ2_On	BOOL			R	FALSE		Comp2Circ2_On - Comp.2 circ.2 status (0=OFF, 1=ON)
106	1	RelayAlrm	BOOL			R	FALSE		RelayAlrm - Global alarm relay
107	1	CoolHeat	BOOL			R	FALSE		CoolHeat - Unit in heating mode (0=Cooling, 1=Heating)
108	1	FC_Status	BOOL			R	FALSE		FC_Status - Free cooling valve status (0=OFF, 1=ON)
109	1	AFreezeHeat	BOOL			R	FALSE		Frost heater status
110	1	SchedOnOff	BOOL			R	FALSE		Unit ON/OFF command by scheduler (0=On, 1=Off)
111	1	A83	BOOL			R	FALSE		Unit - User delivery water temp. probe common broken or disconnected alarm
112	1	A84	BOOL			R	FALSE		Circuit 2 - User delivery water temp. probe broken or disconnected alarm
113	1	A86	BOOL			R	FALSE		Circuit 2 - Source delivery water temp. probe broken or disconnected alarm
114	1	A85	BOOL			R	FALSE		Circuit 1 - Source delivery water temp. probe broken or disconnected alarm
115	1	Comp1Circ1_FrcOffDev	BOOL			R	FALSE		Comp1Circ1_FrcOffDev - Force OFF comp.1 circ.1
116	1	Comp2Circ1_FrcOffDev	BOOL			R	FALSE		Comp2Circ1_FrcOffDev - Force OFF comp.2 circ.1
117	1	Comp1Circ2_FrcOffDev	BOOL			R	FALSE		Comp1Circ2_FrcOffDev - Force OFF comp.1 circ.2
118	1	Comp2Circ2_FrcOffDev	BOOL			R	FALSE		Comp2Circ2_FrcOffDev - Force OFF comp.2 circ.2
119	1	A87	BOOL			R	FALSE		EVD - Incompatible HW alarm
120	1	SrcFanCirc1_On	BOOL			R	FALSE		SrcFanCirc1_On - Source fan circ.1 status (0=OFF, 1=ON)
121	1	SrcPmp1_On	BOOL			R	FALSE		SrcPmp1_On - Source pump 1 status (0=OFF, 1=ON)
122	1	UsrPmp1_On	BOOL			R	FALSE		UsrPmp1_On - User pump 1 status
123	1	RevVlv_Circ1	BOOL			R	FALSE		RevVlv_Circ1 - Reversing valve for refr. circ.1 (0=Cooling, 1=Heating)
124	1	OilEquVlv_Circ1	BOOL			R	FALSE		Oil equalisation solenoid valve circ.1
125	1	SrcFanCirc2_On	BOOL			R	FALSE		SrcFanCirc2_On - Source fan circ.2 status (0=OFF, 1=ON)
126	1	SrcPmp2_On	BOOL			R	FALSE		Source pump 2 on
127	1	UsrPmp2_On	BOOL			R	FALSE		UsrPmp2_On - User pump 2 status

## MAPPING TABLES

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	InitValue	UoM	Description
51	1	A52	BOOL			R	FALSE		Circuit 2 - Discharge pressure probe broken or disconnected alarm
52	1	A53	BOOL			R	FALSE		Circuit 2 - Condensing temperature probe broken or disconnected alarm
53	1	A54	BOOL			R	FALSE		Circuit 2 - Suction pressure probe broken or disconnected alarm
54	1	A55	BOOL			R	FALSE		Circuit 2 - Evaporation temperature probe broken or disconnected alarm
55	1	A56	BOOL			R	FALSE		Circuit 2 - Discharge temperature probe broken or disconnected alarm
56	1	A57	BOOL			R	FALSE		Circuit 2 - Suction temperature probe broken or disconnected alarm
57	1	A58	BOOL			R	FALSE		Circuit 2 - High pressure alarm from pressure switch
58	1	A59	BOOL			R	FALSE		Circuit 2 - High pressure alarm from transducer
59	1	A60	BOOL			R	FALSE		Circuit 2 - Low pressure alarm from transducer
60	1	A61	BOOL			R	FALSE		Circuit 2 - Frost evaporation temperature alarm
61	1	A62	BOOL			R	FALSE		Circuit 2 - Low pressure alarm from pressure switch
62	1	A63	BOOL			R	FALSE		Circuit 2 - Overload compressor 1
63	1	A64	BOOL			R	FALSE		Circuit 2 - Overload compressor 2
64	1	A65	BOOL			R	FALSE		Circuit 2 - Compressor 1 maintenance
65	1	A66	BOOL			R	FALSE		Circuit 2 - Compressor 2 maintenance
66	1	A67	BOOL			R	FALSE		Circuit 2 - Source fan 1 maintenance
67	1	A68	BOOL			R	FALSE		Circuit 2 EVD - Low superheat (SH)
68	1	A69	BOOL			R	FALSE		Circuit 2 EVD - Low evaporation pressure (LOP)
69	1	A70	BOOL			R	FALSE		Circuit 2 EVD - Maximum evaporating pressure (MOP)
70	1	A71	BOOL			R	FALSE		Circuit 2 EVD - Valve motor error
71	1	A72	BOOL			R	FALSE		Circuit 2 EVD - Emergency closing
72	1	A73	BOOL			R	FALSE		Circuit 2 EVD - Incomplete valve closing
73	1	A74	BOOL			R	FALSE		Circuit 2 EVD - Offline
74	1	A75	BOOL			R	FALSE		Circuit 2 Envelope - General alarm + Zone alarm
75	1	A76	BOOL			R	FALSE		Circuit 2 BLDC - Delta pressure greater than the allowable at startup
76	1	A77	BOOL			R	FALSE		Circuit 2 BLDC - Starting failure
77	1	A78	BOOL			R	FALSE		Circuit 2 BLDC - Low differential pressure
78	1	A79	BOOL			R	FALSE		Circuit 2 BLDC - High discharge gas temperature
79	1	A80	BOOL			R	FALSE		Circuit 2 Inverter - Offline
80	1	A81	BOOL			R	FALSE		Circuit 2 Inverter - General alarm + Error code
81	1	PrevAFreeze_C1	BOOL			R	FALSE		PrevAFreeze_C1 - Prevent request for frost condition active inside circ.1
82	1	PrevHP_C1	BOOL			R	FALSE		PrevHP_C1 - Prevent request for high pressure condition active inside circ.1
83	1	PrevAFreeze_C2	BOOL			R	FALSE		PrevAFreeze_C2 - Prevent request for frost condition active inside circ.2
84	1	PrevHP_C2	BOOL			R	FALSE		PrevHP_C2 - Prevent request for high pressure condition active inside circ.2
92	1	Comp1Circ1_DevAlrm	BOOL			R	FALSE		Comp1Circ1_DevAlrm - Comp.1 circ.1 in alarm condition
93	1	Comp1Circ1_AbleToOn	BOOL			R	FALSE		Comp.1 circ.1 enabled to start
94	1	Comp1Circ1_AbleToOff	BOOL			R	FALSE		Comp.1 circ.1 enabled to stop
95	1	Comp1Circ1_FrcdOnByT	BOOL			R	FALSE		Comp.1 circ.1 forced ON by timings (min comp. ON)
96	1	Comp1Circ1_FrcdOffByT	BOOL			R	FALSE		Comp1Circ1_FrcdOffByT - Comp.1 circ.1 forced OFF by timings (min comp. OFF)
97	1	Comp2Circ1_DevAlrm	BOOL			R	FALSE		Comp2Circ1_DevAlrm - Comp.2 circ.1 in alarm condition
98	1	Comp2Circ1_AbleToOn	BOOL			R	FALSE		Comp.2 circ.1 enabled to start
99	1	Comp2Circ1_AbleToOff	BOOL			R	FALSE		Comp.2 circ.1 enabled to stop
100	1	Comp2Circ1_FrcdOnByT	BOOL			R	FALSE		Comp.2 circ.1 forced ON by timings (min comp. ON)
101	1	Comp2Circ1_FrcdOffByT	BOOL			R	FALSE		Comp.2 circ.1 forced OFF by timings (min comp. OFF)
102	1	Comp1Circ1_On	BOOL			R	FALSE		Comp1Circ1_On - Comp.1 circ.1 status (0=OFF, 1=ON)
103	1	Comp2Circ1_On	BOOL			R	FALSE		Comp2Circ1_On - Comp.2 circ.1 status (0=OFF, 1=ON)
104	1	Comp1Circ2_On	BOOL			R	FALSE		Comp1Circ2_On - Comp.1 circ.2 status (0=OFF, 1=ON)
105	1	Comp2Circ2_On	BOOL			R	FALSE		Comp2Circ2_On - Comp.2 circ.2 status (0=OFF, 1=ON)
106	1	RelayAlrm	BOOL			R	FALSE		RelayAlrm - Global alarm relay
107	1	CoolHeat	BOOL			R	FALSE		CoolHeat - Unit in heating mode (0=Cooling, 1=Heating)
108	1	FC_Status	BOOL			R	FALSE		FC_Status - Free cooling valve status (0=OFF, 1=ON)
109	1	AFreezeHeat	BOOL			R	FALSE		Frost heater status
110	1	SchedOnOff	BOOL			R	FALSE		Unit ON/OFF command by scheduler (0=On, 1=Off)
111	1	A83	BOOL			R	FALSE		Unit - User delivery water temp. probe common broken or disconnected alarm
112	1	A84	BOOL			R	FALSE		Circuit 2 - User delivery water temp. probe broken or disconnected alarm
113	1	A86	BOOL			R	FALSE		Circuit 2 - Source delivery water temp. probe broken or disconnected alarm
114	1	A85	BOOL			R	FALSE		Circuit 1 - Source delivery water temp. probe broken or disconnected alarm
115	1	Comp1Circ1_FrcOffDev	BOOL			R	FALSE		Comp1Circ1_FrcOffDev - Force OFF comp.1 circ.1
116	1	Comp2Circ1_FrcOffDev	BOOL			R	FALSE		Comp2Circ1_FrcOffDev - Force OFF comp.2 circ.1
117	1	Comp1Circ2_FrcOffDev	BOOL			R	FALSE		Comp1Circ2_FrcOffDev - Force OFF comp.1 circ.2
118	1	Comp2Circ2_FrcOffDev	BOOL			R	FALSE		Comp2Circ2_FrcOffDev - Force OFF comp.2 circ.2
119	1	A87	BOOL			R	FALSE		EVD - Incompatible HW alarm
120	1	SrcFanCirc1_On	BOOL			R	FALSE		SrcFanCirc1_On - Source fan circ.1 status (0=OFF, 1=ON)
121	1	SrcPmp1_On	BOOL			R	FALSE		SrcPmp1_On - Source pump 1 status (0=OFF, 1=ON)
122	1	UsrPmp1_On	BOOL			R	FALSE		UsrPmp1_On - User pump 1 status
123	1	RevVlv_Circ1	BOOL			R	FALSE		RevVlv_Circ1 - Reversing valve for refr. circ.1 (0=Cooling, 1=Heating)
124	1	OilEquVlv_Circ1	BOOL			R	FALSE		Oil equalisation solenoid valve circ.1
125	1	SrcFanCirc2_On	BOOL			R	FALSE		SrcFanCirc2_On - Source fan circ.2 status (0=OFF, 1=ON)
126	1	SrcPmp2_On	BOOL			R	FALSE		Source pump 2 on
127	1	UsrPmp2_On	BOOL			R	FALSE		UsrPmp2_On - User pump 2 status

Index	Size	Acronym	DataType	Min Value	Max Value	R/W	InitValue	UoM	Description
128	1	RevVlv_Circ2	BOOL			R	FALSE		RevVlv_Circ2 - Reversing valve for refr. circ.2 (0=Cooling, 1=Heating)
129	1	OilEquVlv_Circ2	BOOL			R	FALSE		Oil equalisation solenoid valve circ.2
130	1	HeatCool	BOOL			R	TRUE		HeatCool - Unit in cooling mode (0=Heating, 1=Cooling)
131	1	DfrRun_Circ1	BOOL			R	FALSE		Defrost is running on circ.1
132	1	DfrRun_Circ2	BOOL			R	FALSE		Defrost is running on circ.2
133	1	DfrFrcCompDfrPwr_Circ1	BOOL			R	FALSE		Force circ.1 comp. to defrost capacity
134	1	UnitOn	BOOL			R	FALSE		Unit ON/OFF status (0=OFF, 1=ON)
140	1	EVD_CanGo	BOOL			R	FALSE		Enable EVD EVO driver to control superheat
141	1	ManPmpReqCirc1	BOOL			R	FALSE		Request user pump activation by manual-compressor control in circ.1
142	1	CompsManCirc1	BOOL			R	FALSE		Manual status of comp. in circ.1
143	1	FrcOn_Comp1Circ1_Oil-Migr	BOOL			R	FALSE		Force ON comp.1 circ.1 to avoid oil migration
144	1	FrcOn_Comp2Circ1_Oil-Migr	BOOL			R	FALSE		Force ON comp.2 circ.1 to avoid oil migration
145	1	FrcOn_Comp1Circ2_Oil-Migr	BOOL			R	FALSE		Force ON comp.1 circ.2 to avoid oil migration
146	1	FrcOn_Comp2Circ2_Oil-Migr	BOOL			R	FALSE		Force ON comp.2 circ.1 to avoid oil migration
148	1	UsrFlw_Absent	BOOL			R	FALSE		UsrFlw_Absent - User pump flow absent (0=Flow OK, 1=Flow absent)
149	1	En_DscgPPrb_Circ1	BOOL			R	FALSE		En_DscgTempPrb_Circ1 - Connected discharge temp. probe for circ.1
150	1	En_DscgTempPrb_Circ1	BOOL			R	FALSE		En_DscgTempPrb_Circ1 - Connected discharge temp. probe for circ.1
151	1	En_OvldComp1Circ1_Din	BOOL			R	FALSE		Enable comp.1 circ.1 overload input
152	1	UnitCh	BOOL			R	FALSE		Unit is chiller
153	1	UnitHp	BOOL			R	FALSE		Unit is heat pump
154	1	SrcFan1Circ1Status	BOOL			R	FALSE		Source fan circ.1 status (0=OFF, 1=ON)
155	1	SrcFan1Circ2Status	BOOL			R	FALSE		Source fan circ.2 status (0=OFF, 1=ON)
156	1	ReqTypPrb	BOOL			R	FALSE		Control probe (0=Return; 1=Delivery)
157	1	En_SuctPPrb_Circ1	BOOL			R	FALSE		En_SuctPPrb_Circ1 - Connected suction press. probe for circ.1
159	1	ACU_PANEL	BOOL			R	FALSE		ACU panel
160	1	En_Circ2	BOOL			R	FALSE		Enable circ.2
161	1	En_Comp2Circ1	BOOL			R	FALSE		Enable compr.2 circ.1
162	1	En_Comp2Circ2	BOOL			R	FALSE		Enable compr.2 circ.2
163	1	En_CompsOnOffCirc1	BOOL			R	FALSE		Enable comp. ON/OFF for circ.1
164	1	En_CompsOnOffCirc2	BOOL			R	FALSE		Enable comp. ON/OFF for circ.2
165	1	En_CondTempPrb_Circ1	BOOL			R	FALSE		Connected cond. temp. probe for circ.1
166	1	En_SuctTempPrb_Circ1	BOOL			R	FALSE		En_SuctTempPrb_Circ1 - Connected suction temp. probe for circ.1
167	1	UsrHeater2	BOOL			R	FALSE		UsrHeater2 - User heater 2 status
168	1	Al_RegulationAlrms	BOOL			R	FALSE		Al_RegulationAlrms - Control alarms
169	1	Al_MiscAlrms	BOOL			R	FALSE		Al_MiscAlrms - Miscellaneous alarms
170	1	Al_SrsCirc1	BOOL			R	FALSE		Al_SrsCirc1 - Serious alarm circ.1
171	1	Al_SrsCirc2	BOOL			R	FALSE		Al_SrsCirc2 - Serious alarm circ.2
172	1	Al_SrsCircs	BOOL			R	FALSE		Al_SrsCircs - Serious alarm circ.1 and circ.2
173	1	RemCmdComp1Circ1	BOOL			R	FALSE		RemCmdComp1Circ1 - Remote comand comp.1 circ.1
174	1	RemCmdComp2Circ1	BOOL			R	FALSE		RemCmdComp2Circ1 - Remote comand comp.2 circ.1
175	1	RemCmdComp1Circ2	BOOL			R	FALSE		RemCmdComp1Circ2 - Remote comand comp.1 circ.2
176	1	RemCmdComp2Circ2	BOOL			R	FALSE		RemCmdComp2Circ2 - Remote comand comp.2 circ.2
178	1	En_RemCmdComp-1Circ1_Din	BOOL			R	FALSE		Enable remote command comp.1 circ.1 input
179	1	En_RemCmdComp-2Circ1_Din	BOOL			R	FALSE		Enable remote command comp.2 circ.1 input
180	1	En_UsrRetWTempPrb	BOOL			R	FALSE		En_UsrRetWTempPrb - Connected user return water temperature probe
181	1	En_UsrDlvWTempPrb	BOOL			R	FALSE		En_UsrDlvWTempPrb - Connected user delivery water temperature probe
183	1	AFreezeHeatUsr_Circ2	BOOL			R	FALSE		Circuit 2 user frost heater status
190	1	Active2ndSetPDin	BOOL			R	FALSE		Second set point input
191	1	CoolHeatDin	BOOL			R	FALSE		Cool/Heat input status (0=Cooling, 1=Heating)
192	1	HiP_Pstat_Circ1	BOOL			R	FALSE		High pressure switch on circ.1
193	1	OvldComp1Circ1	BOOL			R	FALSE		Comp.1 circ.1 overload
194	1	OvldComp2Circ1	BOOL			R	FALSE		Comp.2 circ.1 overload
195	1	RemAlrmDin	BOOL			R	FALSE		Remote alarm
196	1	RemOnOffDin	BOOL			R	FALSE		Remote unit ON/OFF command from digital input (0= OFF, 1=ON)
198	1	UsrPmp1Ovld	BOOL			R	FALSE		User pump 1 overload input logic
199	1	UsrPmp2Ovld	BOOL			R	FALSE		User pump 2 overload input logic
200	1	UnitChOnly	BOOL			R	FALSE		Unit is chiller only
197	1	UnitWW	BOOL			R	FALSE		Unit is WW - FALSE: Unit is not WW, TRUE: Unit is WW
201	1	UnitChHp	BOOL			R	FALSE		Unit is Chiller/Heat pump with reversal of refrigeration cycle
205	1	UnitHpOnly	BOOL			R	FALSE		Unit is heat pump only
202	1	UnitChHp_NotAA	BOOL			R	FALSE		Unit is reverse-cycle but not AA
203	1	UnitChHp_WR	BOOL			R	FALSE		UnitChHp_WR - WW Chiller/Heat pump with reversal on water circuit
206	1	Rev4WayValve_Circ2_Out-STATUS	BOOL			R	FALSE		4WayValve reverse output command for circ 2
204	1	En_AIN_PwrReqPrb_Circ1	BOOL			R	FALSE		Connected analogue capacity request probe on circuit 1
207	1	A88	BOOL			R	FALSE		Circuit 1 - Source fan/pump alarm
209	1	LP_Pstat_Circ1	BOOL			R	FALSE		Low pressure switch on circ.1
210	1	A90	BOOL			R	FALSE		Unit - Power failure

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