



ECG-UG-17-006

REVISION

DATE

PAGE

AquaCIAT CALEO -
BACnet Option


Rev B

09/02/2018

1 OF 36

Connect Touch Control for AquaCiat CALEO Heat pump

BACNET OPTION **User's guide**

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	2 OF 36

REVISIONS HISTORY

REV	DATE yyy mm dd	DESCRIPTION	DONE BY
Original	2017-10-12	Original	O. GUCHER
Rev B	2018-02-09	Defect #77: Fixed FACTORY_vsd_pump from BV to AV	O. GUCHER


	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	3 OF 36


TABLE OF CONTENT

REVISIONS HISTORY	2
TABLE OF CONTENT.....	3
1 INTRODUCTION.....	5
1.1 Purpose	5
1.2 Definitions, Abbreviations and acronyms.....	5
2. BACNET FOR AQUACIAT CALEO HEAT-PUMP	6
2.1 BACnet settings.....	6
2.2 BACnet chiller objects.....	7
2.2.1 Optionnal properties	7
2.2.2 Present Value property access	8
2.2.3 Notification class object	8
2.2.4 Savings	8
2.3 Objects List.....	9
2.3.1 BACNet Conf. Objects List	9
2.3.2 BACNet TrendLog Objects List	14
2.3.3 BACNet codes	16
3 BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS).....	17
3.1 Product Description:.....	17
3.2 BACnet Standardized Device Profile (Annex L):	17
3.3 BACnet Interoperability Building Blocks Supported (Annex K):	18
3.3.1 Data Sharing BIBBs	18
3.3.2 Alarm / Event BIBBs	18
3.3.3 Scheduling BIBBs	18
3.3.4 Trending BIBBs	18
3.3.5 Device Management BIBBs	18
3.3.6 Network Management BIBBs	19
3.4 Segmentation Capability:.....	19
3.5 Standard Object Types Supported:	20
3.5.1 Standard Object Types Supported: Accumulator-Object	20
3.5.2 Standard Object Types Supported: Analog-Input-Object	21
3.5.3 Standard Object Types Supported: Analog-Output-Object	21
3.5.4 Standard Object Types Supported: Analog-Value-Object	22
3.5.5 Standard Object Types Supported: Averaging Object	22
3.5.6 Standard Object Types Supported: Binary-Input-Object	23
3.5.7 Standard Object Types Supported: Binary-Output-Object	24
3.5.8 Standard Object Types Supported: Binary-Value-Object	25
3.5.9 Standard Object Types Supported: Calendar-Object	25
3.5.10 Standard Object Types Supported: Command	25
3.5.11 Standard Object Types Supported: Device-Object	25
3.5.12 Standard Object Types Supported: Event Enrollment Object	26
3.5.13 Standard Object Types Supported: File	26
3.5.14 Standard Object Types Supported: Group	27
3.5.15 Standard Object Types Supported: Loop	27
3.5.16 Standard Object Types Supported: Multistate-Input-Object	28
3.5.17 Standard Object Types Supported: Multistate-Output-Object	28



ECG-UG-17-006	REVISION	DATE	PAGE
AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	4 OF 36

3.5.18	Standard Object Types Supported: Multistate-Value-Object	29
3.5.19	Standard Object Types Supported: Notification Class Object	29
3.5.20	Standard Object Types Supported: Program	29
3.5.21	Standard Object Types Supported: Pulse Converter	30
3.5.22	Standard Object Types Supported: Schedule Object	30
3.5.23	Standard Object Types Supported: Trendlog Object	31
3.6	Device Address Binding :	31
3.7	Data Link Layer Options:	31
3.8	Networking Options:	32
3.9	Character Sets Supported:	32
4	HOW TO FIND AND MODIFY THE UNIT IP ADDRESS	33
5	BACNET IP COMMUNICATION PROBLEM	36

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	5 OF 36

1 INTRODUCTION

1.1 Purpose


This guide is intended to be used by Building Management System (BMS) engineer inside or outside the CIAT Corporation.

It describes in details the AquaCiat CALEO BACnet option.

All information already provided in the product IOM are not available in this document.

1.2 Definitions, Abbreviations and acronyms

Acronym /Abbreviation	Definition
BMS	Building Management System It is a computer-based control system installed in buildings that controls and monitors the building's mechanical and electrical equipment such as ventilation, lighting, power systems, fire systems, and security systems. A BMS consists of software and hardware
BACnet/IP	Building Automation and Controls Network. Open Protocol for the controlled exchange of data between two or more intelligent control devices or BMS. BACnet is used over IP (Internet Protocol).
BTL	BACnet Testing Laboratories
AV	Analog Value
BV	Binary Value
COV	Change of Value

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	6 OF 36

2. BACNET FOR AQUACIAT CALEO HEAT-PUMP

The AquaCiat CALEO Heat-pump supports the BACnet protocol as a B-ASC BACnet equipment.


In addition, the BACnet stack will implement:

- Optional properties as COV, Intrinsic Reporting properties, Commandable properties on some objects.
- The generation of limited alarm and event notifications and the ability to direct them to recipients,
- The tracking acknowledgments of alarms from human operators
- The Adjustment of alarm parameters
- The Read/Write Property Multiple services

This option can be mounted during manufacturing or on site.

2.1 BACnet settings

There is a configuration menu to Enable or Disable BACnet. The password level required to access this configuration is "Advanced User". The button is called "BACnet

Configuration" and the corresponding icon is: 

After a power up, if the BACnet "dongle" is detected and BACnet is enabled (default configuration: Enable) then the Heat-pump objects will be created.

Metric units and Imperial units are supported. By default, BACnet data will be in metric units.

The BACnet network and the device object instance (or identifier) can also be modified.

This default instance has been chosen to easily recognize the Heat-pump on a BACnet network. This parameter must be unique on the BACnet network.


It must then be modified if more than one CIAT Chiller is connected to the BACnet network.

By default, the device object instance is **1600001** in order to easily recognize the CIAT chiller. The first two digits are the BACnet CIAT Vendor (16).

	Menu Name	Status	Default	Unit	Note	Menu text description	Low Limit	High Limit
1	bacena	Disable/Enable	1	-		BACnet Enable		
2	bacunit	No/yes	1	-		Metric Unit	-	-
3	network	1 to 9999	1601	-		Network	1	9999
4	ident	0 to 9999999	1600001	-		Identifier	0	9999999
5	bbmd	0 to 2	0	-		BACnet Management Device	0	2

Note: Changing one of these BACnet parameters will cause a reboot of the board after 1 minute.

Important: Changing IP address from the SETUP menu will require a manual

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	7 OF 36

reboot or power cycle of the Touch Pilot controller in order to re-build the BACnet stack.

2.2 BACnet chiller objects

The AquaCiat CALEO heat-pump contains up to 600 BACnet objects.

These objects are of ANALOG_VALUE (AV) or BINARY_VALUE (BV) type.

There is one Notification Class object for alarm reporting and one Device object (these objects are not in the list below).

Some of AV and BV objects support **Change Of Value** (COV) option and/or **Intrinsic Reporting** Option and/or **Commandable option**.

These objects are pre-defined and cannot be deleted. It is also not possible to add any.

Objects name are built from table name and point name concatenated in order to recognize them easily.

For example:

If the table name is *GENCONF* and the point name is *prio_cir*, the object name will be *GENCONF_prio_cir*.

2.2.1 Optional properties

For the **Change of Value Option** (COV), the increment value can be configured.

For the **Intrinsic reporting option** (IR), the alarm configuration and the configuration of the equipment to be notified are required to activate the Intrinsic Reporting mechanism.

Objects with **Commandable option** are characterised with the "_wr" suffix.

If the Local Operating Type is set to Network, then it is possible to control the Unit from the BACnet writing these objects:

- The highest priority value of the commandable object will be copied to the present value of the object using the same name with the "_rd" suffix.

For example:

CTRL_POINT_wr highest priority value copied to CTRL_POINT_rd present value.


If the Local Operating Type is set to Local or Remote, then the Priority value will not be applied. The value determined by the controller will be applied:

- The present value of the object name with the "_rd" suffix

For the example:

CTRL_POINT_rd will still reflect the current software value.

- The BACnet priority level corresponds to the override level (1:1). If this BACnet priority level is removed, the priority level immediately below will be applied to the corresponding point (an "Auto" command will be applied first).
- When an override level is applied from the Network, the override level will be the

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	8 OF 36

BACnet priority level.

- BACnet priority level 16 (the lowest) has no equivalent and does not correspond to the override. **This priority level should not be used.**

2.2.2 Present Value property access

Writing AV and BV "Present Value" is authorized by the BACnet protocol for all objects. However, the Heat-pump application may or may not authorize the "Present value" writing regarding the "access" object parameter, i.e. Read Only (RO) or Read/Write (RW).

If a "present value" property with an access parameter equal to Read only (RO) is written then the present value will be overwritten by the Heat-pump application with the previous value.

Objects with "present value" in Read Only access are all objects used for Heat-pump configuration and status.

Objects with "present value" in Read/Write access are objects used for setpoint configuration (named with a SETPOINT_ prefix) and Commandable objects (with a _wr suffix).


2.2.3 Notification class object

The notification class object can notify up to 5 BACnet devices. These devices are listed in the Recipient List property.

Important: Enter the IP address of the device to notify.
Device Name and instance are not yet supported.

2.2.4 Savings

COV increment property, Intrinsic Reporting properties, Priority values and Notification class properties are saved in files and restored at power up.

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	9 OF 36

2.3 Objects List

The BACnet objects list includes the list of all objects names with respect to the following parameters:

AV: ANALOG_VALUE object type

BV: BINARY_VALUE object type

COV: Change Of Value

IR: Intrinsic Reporting (Alarming)

CMD: Commandable

RO: access to Present Value in Read Only

RW: access to Present Value in Read Write

For BMS, the more often used objects are objects with names starting with “GENUNIT”, “TEMP”, “PRESSURES”, “RUNTIMES” and “SETPOINT” prefixes.

2.3.1 BACNet Conf. Objects List

Object Name	Type	Instance	Option	COVInc	PV Access	Description
GENCONF_off_on_d	AV	1		0	RO	Unit Off to On Delay
PUMPCONF_pump_seq	BV	1		0	RO	Exchanger Pump Enable
HCCONFIG_hr_sel	AV	2		0	RO	Heating Reset Select
GENUNIT_CTRL_TYP	AV	3		0	RO	Local=0 Net.=1 Remote=2
GENUNIT_STATUS	AV	4	IR	0	RO	Running Status
GENUNIT_CHIL_S_S	BV	2	IR	0	RO	Net.: Cmd Start/Stop
GENUNIT_CAP_T	AV	5		0	RO	Percent Total Capacity
GENUNIT_CAPA_T	AV	6		0	RO	Circuit A Total Capacity
GENUNIT_CAPB_T	AV	7		0	RO	Circuit B Total Capacity
GENUNIT_DEM_LIM	AV	8		0	RO	Active Demand Limit Val
GENUNIT_CTRL_PNT	AV	9		0	RO	Control Point
GENUNIT_CTRL_WT	AV	10		0	RO	Control Water Temp
GENUNIT_ALM	AV	11		0	RO	Alarm
TEMP_EWT	AV	12	COV IR	2	RO	Entering Water Temp.
TEMP_LWT	AV	13	COV IR	2	RO	Leaving Water Temp.
TEMP_OAT	AV	14	COV IR	2	RO	Outside Air Temperature
TEMP_CHWSTEMP	AV	15	COV IR	2	RO	Master/Slave Temperature
TEMP_SCT_A	AV	16	COV IR	2	RO	Saturated Condensing Tp
TEMP_SST_A	AV	17	COV IR	2	RO	Saturated Suction Temp
TEMP_SUCTION_A	AV	18	COV IR	2	RO	Suction Gas Temperature
TEMP_ECO_SST	AV	19		0	RO	Eco. Saturated Suction T
TEMP_ECO_SUCTION	AV	20		0	RO	Economizer Suction Gas T



ECG-UG-17-006

REVISION

DATE

PAGE

AquaCIAT CALEO -
BACnet Option

Rev B

09/02/2018

10 OF 36

Object Name	Type	Instance	Option	COVInc	PV Access	Description
TEMP_DEFRT_A	AV	21		0	RO	Defrost Temperature A
TEMP_DEFRT_2	AV	22		0	RO	Defrost Temp Second Coil
TEMP_DHW_TT	AV	23		0	RO	DHW Tank Temperature
PRESSURE_DP_A	AV	24	COV IR	15	RO	Discharge Pressure
PRESSURE_SP_A	AV	25	COV IR	15	RO	Main Suction Pressure
PRESSURE_ECO_SP_A	AV	26	COV IR	15	RO	Eco. Suction Pressure
PRESSURE_W_P_IN	AV	27		0	RO	Inlet Water Pressure
INPUTS_ONOFF_SW	BV	3		0	RO	Remote On/Off Switch
INPUTS_FLOW_SW	BV	4	IR	0	RO	Flow Switch
OUTPUTS_CP_A1	BV	5		0	RO	Compressor 1 Output
OUTPUTS_CP_A2	BV	6	IR	0	RO	Compressor 2 Output
OUTPUTS_EXV_A	AV	28	IR	0	RO	Main EXV Position
OUTPUTS_EXV_ECO	AV	29		0	RO	Economizer EXV Position
OUTPUTS_EV_VALV1	BV	7		0	RO	ECO/CPA1 Isolation Valve
OUTPUTS_EV_VALV2	BV	8		0	RO	ECO/CPA2 Isolation Valve
OUTPUTS_EXCH_HTR	BV	9		0	RO	Exchangers Heaters
OUTPUTS_PUMP_1	BV	10		0	RO	Pump 1 Output
OUTPUTS_PUMP_EXT	AV	30		0	RO	External Pump Output
RUNTIME_hr_mach	AV	31		0	RO	Machine Operating Hours
RUNTIME_st_mach	AV	32	IR	0	RO	Machine Starts Number
RUNTIME_hr_cp_a1	AV	33	IR	0	RO	Compressor A1 Hours
RUNTIME_st_cp_a1	AV	34	IR	0	RO	Compressor A1 Starts
RUNTIME_hr_cp_a2	AV	35	IR	0	RO	Compressor A2 Hours
RUNTIME_st_cp_a2	AV	36	IR	0	RO	Compressor A2 Starts
RUNTIME_hr_pump1	AV	37		0	RO	Water Pump Hours
LOADFACT_ctrl_avg	AV	38		0	RO	Average Ctrl Water Temp
LOADFACT_delta_t	AV	39		0	RO	Water Delta T
LOADFACT_wp_in	AV	40		0	RO	Corrected Water Pressure
LOADFACT_reset	AV	41		0	RO	Reset Amount
LOADFACT_zm	AV	42		0	RO	Current Z Multiplier Val
LOADFACT_smz	AV	43		0	RO	Load/Unload Factor
LOADFACT_over_cap	AV	44		0	RO	Active Capacity Override
LOADFACT_SH_A	AV	45		0	RO	Main Superheat
LOADFACT_sh_sp_a	AV	46		0	RO	Main Superheat Setp
LOADFACT_ECO_SH	AV	47		0	RO	Economizer Superheat
LOADFACT_ecosh_sp	AV	48		0	RO	Economizer SH Setpoint
ALARMRST_alarm_1c	AV	49		0	RO	Current Alarm 1
ALARMRST_alarm_2c	AV	50		0	RO	Current Alarm 2



ECG-UG-17-006

REVISION

DATE

PAGE


AquaCIAT CALEO -
BACnet Option

Rev B


09/02/2018

11 OF 36


Object Name	Type	Instance	Option	COVInc	PV Access	Description
ALARMRST_alarm_3c	AV	51		0	RO	Current Alarm 3
ALARMRST_alarm_4c	AV	52		0	RO	Current Alarm 4
ALARMRST_alarm_5c	AV	53		0	RO	Current Alarm 5
M_MSTSLV_mstslv	AV	54		0	RO	Unit is Master or Slave
M_MSTSLV_ms_activ	BV	11		0	RO	Master/Slave Ctrl Active
M_MSTSLV_lead_sel	BV	12		0	RO	Lead Unit is the:
M_MSTSLV_slv_stat	AV	55		0	RO	Slave Chiller State
M_MSTSLV_slv_capt	AV	56		0	RO	Slave Chiller Total Cap
M_MSTSLV_ms_error	AV	57		0	RO	Master/Slave Error
DEFROST_frost_a	AV	58		0	RO	Exchanger Frost Factor
DEFROST_defr_dua	AV	59		0	RO	Defrost Duration
LAST_POR_date_on1	AV	60		0	RO	Power On 1 :day-mon-year
LAST_POR_date_on2	AV	61		0	RO	Power On 2 :day-mon-year
LAST_POR_date_on3	AV	62		0	RO	Power On 3 :day-mon-year
LAST_POR_date_on4	AV	63		0	RO	Power On 4 :day-mon-year
LAST_POR_date_on5	AV	64		0	RO	Power On 5 :day-mon-year
LAST_POR_time_on1	AV	65		0	RO	Power On 1 :hour-minute
LAST_POR_time_on2	AV	66		0	RO	Power On 2 :hour-minute
LAST_POR_time_on3	AV	67		0	RO	Power On 3 :hour-minute
LAST_POR_time_on4	AV	68		0	RO	Power On 4 :hour-minute
LAST_POR_time_on5	AV	69		0	RO	Power On 5 :hour-minute
LAST_POR_date_of1	AV	70		0	RO	PowerDown 1:day-mon-year
LAST_POR_date_of2	AV	71		0	RO	PowerDown 2:day-mon-year
LAST_POR_date_of3	AV	72		0	RO	PowerDown 3:day-mon-year
LAST_POR_date_of4	AV	73		0	RO	PowerDown 4:day-mon-year
LAST_POR_date_of5	AV	74		0	RO	PowerDown 5:day-mon-year
LAST_POR_time_of1	AV	75		0	RO	PowerDown 1:hour-minute
LAST_POR_time_of2	AV	76		0	RO	PowerDown 2:hour-minute
LAST_POR_time_of3	AV	77		0	RO	PowerDown 3:hour-minute
LAST_POR_time_of4	AV	78		0	RO	PowerDown 4:hour-minute
LAST_POR_time_of5	AV	79		0	RO	PowerDown 5:hour-minute
PR_LIMIT_sdt_m_a	AV	80		0	RO	Discharge A Temp Average
PR_LIMIT_sdtlim_a	AV	81		0	RO	Discharge A Temp Limit
PR_LIMIT_sst_m_a	AV	82		0	RO	Suction A Temp Average
FACTORY_wp_sel	BV	13		0	RO	Water Pump ?

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	12 OF 36

Object Name	Type	Instance	Option	COVInc	PV Access	Description
FACTORY_vsd_pump	AV	83		0	RO	Variable Speed Pump
CP_UNABL_un_cp_a1	BV	14		0	RO	Compressor A1 Disable
CP_UNABL_un_cp_a2	BV	15		0	RO	Compressor A2 Disable
MST_SLV_ms_sel	AV	84		0	RO	Master/Slave Select:
MST_SLV_ms_ctrl	AV	85		0	RO	Master Control Type:
MST_SLV_slv_addr	AV	86		0	RO	Slave Address
MST_SLV_lag_pump	BV	16		0	RO	Lag Unit Pump Control
SERVICE1_ewt_opt	BV	17		0	RO	Entering Fluid Control
SERVICE1_sh_sp_a	AV	87		0	RO	Main EXV Superheat Setp
SERVICE1_eco_shsp	AV	88		0	RO	Economizer Superheat Sp
SERVICE1_mop_sp	AV	89		0	RO	EXV MOP Setpoint
SERVICE1_hp_th	AV	90		0	RO	High Pressure Threshold
SERVICE1_heatersp	AV	91		0	RO	Cooler Heater Delta Spt
SERVICE1_zm_spt	AV	92		0	RO	Auto Z Multiplier Setpt
SERVICE1_hc_zm	AV	93		0	RO	Maximum Z Multiplier
SERVICE1_flow_ctl	AV	94		0	RO	Flow Control Method
SERVICE1_dt_stp	AV	95		0	RO	Flow Delta T Setpoint
SERVICE1_pump_min	AV	96		0	RO	Pump Minimum Speed
SERVICE1_pump_sav	AV	97		0	RO	Pump Min Speed Cap=0%
SERVICE1_pump_max	AV	98		0	RO	Pump Maximum Speed
SETPOINT_hsp1	AV	99		0	RW	Heating Setpoint 1
SETPOINT_hsp2	AV	100		0	RW	Heating Setpoint 2
SETPOINT_hramp_sp	AV	101		0	RW	Heating Ramp Loading
SETPOINT_lim_sp1	AV	102		0	RW	Switch Limit Setpoint
BACNET_bacena	BV	18		0	RO	BACnet enable
BACNET_bacunit	BV	19		0	RO	Metric Unit
BACNET_network	AV	103		0	RO	Network
BACNET_ident	AV	104		0	RO	Identifier
BACNET_bbmd	AV	105		0	RO	BACnet Management Device
GENUNIT_CHIL_S_S_wr	BV	20		0	RW	Net.: Cmd Start/Stop
GENUNIT_CTRL_PNT_wr	AV	106	CMD	0	RW	Control Point
GENUNIT_DEM_LIM_wr	AV	107	CMD	0	RW	Demand Limit
OUTPUTS_PUMP_1_wr	BV	21	CMD	0	RW	Evaporator pump 1
OUTPUTS_PUMP_EXT_wr	AV	108	CMD	0	RW	Evaporator External Pump
HR_PARTIAL_DOWNTIME	AV	109		0	RO	Cumulated Downtime when alarm state is partial
HR_TOTAL_DOWNTIME	AV	110		0	RO	Cumulated Downtime when alarm state is tripout
CAPA_AVAILABLE	AV	111		0	RO	Unit Available Capacity ON
CHILLSTAT	AV	112		0	RO	Unit Status
ALM_EWT_F	BV	22	IR	0	RO	Water Exchanger Entering Fluid Thermistor Failure

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	13 OF 36

Object Name	Type	Instance	Option	COVInc	PV Access	Description
ALM_LWT_F	BV	23	IR	0	RO	Water Exchanger Leaving Fluid Thermistor Failure
ALM_DEFROST_T_A_F	BV	24	IR	0	RO	Circuit A Defrost Thermistor Failure
ALM_DEFROST_T_2_F	BV	25	IR	0	RO	2d Coil Defrost Thermistor Failure
ALM_OAT_F	BV	26	IR	0	RO	OAT Thermistor Failure
ALM_CHWSTEMP_F	BV	27	IR	0	RO	MASTER/Slave Common Fluid Thermistor Failure
ALM_SUCTION_T_A_F	BV	28	IR	0	RO	Circuit A Suction Gas Thermistor Failure
ALM_ECO_T_A_F	BV	29	IR	0	RO	Circuit A Economizer Gas Thermistor Failure
ALM_DHW_F	BV	30	IR	0	RO	Domestic Hot Water Tank Thermistor Failure
ALM_DP_A_F	BV	31	IR	0	RO	Circuit A Discharge Pressure Transducer Failure
ALM_SP_A_F	BV	32	IR	0	RO	Circuit A Suction Pressure Transducer Failure
ALM_ECO_SP_A_F	BV	33	IR	0	RO	Circuit A Economizer Pressure Transducer
ALM_WP_IN_F	BV	34	IR	0	RO	Water Exchanger Entering Fluid Transducer Failure
ALM_DRV_WTR_PUMP_F	BV	35	IR	0	RO	Variable Speed Water Pump Failure
ALM_SIOB_CIR_A_COM_F	BV	36	IR	0	RO	Loss of communication with SIOB Board Number A
ALM_LOSS_COMM_AUX1_N1_F	BV	37	IR	0	RO	Loss of communication with AUX1 Board
ALM_CPA1_FBK_KRIWAN_F	BV	38	IR	0	RO	Comp. A1 failed: Motor protection Kriwan Safety Opened
ALM_CPA2_FBK_KRIWAN_F	BV	39	IR	0	RO	Comp. A2 failed: Motor protection Kriwan Safety Opened
ALM_EXCH_FREEZE_F	BV	40	IR	0	RO	Water Exchanger Freeze Protection
ALM_LOW_SUCTION_A_F	BV	41	IR	0	RO	Circuit A Low Saturated Suction Temperature
ALM_HIGH_SH_A_F	BV	42	IR	0	RO	Circuit A High Superheat
ALM_LOW_SH_A_F	BV	43	IR	0	RO	Circuit A Low Superheat
ALM_COOLER_FLOW_F	BV	44	IR	0	RO	Cooler Interlock Failure
ALM_CPA1_REVERSE_ROT_F	BV	45	IR	0	RO	Compressor A1 Not Started Or Pressure Increase not Established

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	14 OF 36

Object Name	Type	Instance	Option	COVInc	PV Access	Description
ALM_CPA2_REVERSE_ROT_F	BV	46	IR	0	RO	Compressor A2 Not Started Or Pressure Increase not Established
ALM_LOSS_COM_MS_F	BV	47	IR	0	RO	Master/Slave communication Failure
ALM_CCN_EMSTOP_F	BV	48	IR	0	RO	Unit is in Network emergency stop
ALM_PUMP1_F	BV	49	IR	0	RO	Water Pump #1 Fault
ALM_REPEATED_HI_DGT_A_F	BV	50	IR	0	RO	Circuit A Repeated High Discharge Gas Overrides
ALM_REPEATED_LO_SST_A_F	BV	51	IR	0	RO	Circuit A Repeated Low Suction Temp Overrides
ALM_HEAT_LOW_EWT_F	BV	52	IR	0	RO	Low Entering Water Temperature In Heating
ALM_HP_SWITCH_A_F	BV	53	IR	0	RO	Circuit A High pressure switch Failure
ALM_SENSORS_SWAP_F	BV	54	IR	0	RO	Water Exchanger Temperature Sensors Swapped
ALM_SERVICE_MAINT_ALERT	BV	55	IR	0	RO	Service Maintenance Alert
ALM_M_S_CONFIG_F	BV	56	IR	0	RO	Master Chiller Configuration Error
ALM_INI_FACT_CONF_F	BV	57	IR	0	RO	Initial Factory Configuration Required
ALM_ILL_FACT_CONF_F	BV	58	IR	0	RO	Illegal Configuration
ALM_SIOB_A_LOW_VOLT_F	BV	59	IR	0	RO	Circuit A SIOB Low Voltage Failure
ALM_FGAS_NEEDED	BV	60	IR	0	RO	Fgas check needed, call your maintenance company
ALM_DHW_ANTILEG_F	BV	61	IR	0	RO	DHW Antilegionella Setpoint Not Achieved


Note: The configuration parameters of the equipment are available in Read Only access. Setpoint parameters are available in read/Write access

Note:


- 1- The ALMRST_alarm_X present values are the « JBus » alarm code of the equipment (see IOM documentation of the equipment),
- 2- The equipment STATUS and ALM parameter are ASCII coded. In order to get them from the BACnet, the « GENUNIT_STATUS » and « GENUNIT_ALM » present value are filled with a BACnet code (see below)

2.3.2 BACNet TrendLog Objects List

BACNet Object	Log	Buffer	Log	Notification	Stop	Notify	Intrinsic
---------------	-----	--------	-----	--------------	------	--------	-----------

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	15 OF 36

	Enabled	Size	Interval	Threshold	When Full	Type	Reporting
GENUNIT_STATUS	YES	250	30000	100	NO	Alarms	Event Enable
GENUNIT_CAP_T	YES	250	30000	100	NO	Alarms	Event Enable
GENUNIT_CAPA_T	YES	250	30000	100	NO	Alarms	Event Enable
GENUNIT_CAPB_T	YES	250	30000	100	NO	Alarms	Event Enable
GENUNIT_CTRL_PNT	YES	250	30000	100	NO	Alarms	Event Enable
TEMP_EWT	YES	250	30000	100	NO	Alarms	Event Enable
TEMP_LWT	YES	250	30000	100	NO	Alarms	Event Enable
TEMP_OAT	YES	250	30000	100	NO	Alarms	Event Enable
TEMP_CHWSTEMP	YES	250	30000	100	NO	Alarms	Event Enable
TEMP_SCT_A	YES	250	30000	100	NO	Alarms	Event Enable
TEMP_SST_A	YES	250	30000	100	NO	Alarms	Event Enable
TEMP_ECO_SST	YES	250	30000	100	NO	Alarms	Event Enable
RUNTIME_hr_mach	YES	250	360000	100	NO	Alarms	Event Enable
RUNTIME_st_mach	YES	250	360000	100	NO	Alarms	Event Enable
RUNTIME_hr_cp_a1	YES	250	360000	100	NO	Alarms	Event Enable
RUNTIME_st_cp_a1	YES	250	360000	100	NO	Alarms	Event Enable
RUNTIME_hr_cp_a2	YES	250	360000	100	NO	Alarms	Event Enable
RUNTIME_st_cp_a2	YES	250	360000	100	NO	Alarms	Event Enable
LOADFACT_zm	YES	250	30000	100	NO	Alarms	Event Enable
LOADFACT_smz	YES	250	30000	100	NO	Alarms	Event Enable
LOADFACT_over_cap	YES	250	30000	100	NO	Alarms	Event Enable
HR_PARTIAL_DOWNTIME	YES	250	30000	100	NO	Alarms	Event Enable
HR_TOTAL_DOWNTIME	YES	250	30000	100	NO	Alarms	Event Enable

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	16 OF 36


2.3.3 **BACNet codes**

Equipment status (STATUS):

BACnet code	Text
0	Off
1	Running
2	Stopping
3	Delay
4	Tripout
5	Ready
6	override
7	defrost
8	Run Test
9	Test
10	Local
11	Network
12	Remote
13	Auto
14	Setp 1
15	Setp 2
16	4-20mA
17	Setp Sw
18	Ice_sp
19	Heat
20	Cool
21	Standby
22	Both
23	L-off
24	L-on
25	L-sched
26	Network
27	Remote
28	Master

Alarm state (ALM):

Code BACnet	Code
0	Normal
1	Partial
2	Shutdown

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	17 OF 36

3 BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS)

Date: 05.04.2016
Vendor Name: CIAT (Vendor ID = 16)
Product Names: BACnet for Web panels CIAT Chiller
Product Model Number: 30
Applications Software Version: ECG-SR-20R43011
Firmware Revision: 3.34
BACnet Protocol Revision: 1.4 (BACnet ANSI/ASHRAE 135-2008)


3.1 Product Description:

This control system is intended to all types of air to water cooled chillers using scroll compressors. It shall operate as either a stand-alone control system or as a part of the Network (CCN or BACnet/IP).

IMPORTANT: The BACnet stack is not yet certified by BTL

3.2 BACnet Standardized Device Profile (Annex L):

- BACnet Operator Workstation (B-OWS)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)
- BACnet Gateway (B-GW)

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	18 OF 36

3.3 BACnet Interoperability Building Blocks Supported (Annex K):

3.3.1 Data Sharing BIBBs

Data Sharing Read-Property-A	DS-RP-A
Data Sharing Read-Property-B	DS-RP-B
Data Sharing Read-Property-Multiple-A	DS-RPM-A
Data Sharing Read-Property-Multiple-B	DS-RPM-B
Data Sharing Write-Property-A	DS-WP-A
Data Sharing Write-Property-B	DS-WP-B
Data Sharing Write-Property-Multiple-B	DS-WPM-B
Data Sharing COV-A	DS-COV-A
Data Sharing COV-B	DS-COV-B
Data Sharing COV-Unsolicited-A	DS-COVU-A
Data Sharing COV-Unsolicited-B	DS-COVU-B
Data Sharing COV-Property-B	DS-COVP-B

3.3.2 Alarm / Event BIBBs

Alarm and Event-Notification Internal-B	AE-N-I-B
Alarm and Event-Notification External-B	AE-N-E-B
Alarm and Event-Acknowledge-B	AE-ACK-B
Alarm and Event-Information-B	AE-INFO-B
Alarm and Event-Alarm Summary-A	AE-ASUM-B
Alarm and Event-Enrollment Summary-B	AE-ESUM-B


3.3.3 Scheduling BIBBs

Scheduling-Internal-B	SCHE-I-B
Scheduling-External-B	SCHE-E-B
Scheduling-Weekly-B	?
Scheduling-Read Only-B	?

3.3.4 Trending BIBBs

Trending-Viewing and Modifying Trends Internal-B	T-VMT-I-B
Trending-Viewing and Modifying Trends External-B	T-VMT-E-B
Trending-Automated Trend Retrieval-B	T-ATR-B

3.3.5 Device Management BIBBs

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	19 OF 36


Device Management-Dynamic Device Binding-A	DM-DDB-A
Device Management-Dynamic Device Binding-B	DM-DDB-B
Device Management-Dynamic Object Binding-A	DM-DOB-A
Device Management-Dynamic Object Binding-B	DM-DOB-B
Device Management-DeviceCommunicationControl-B	DM-DCC-B
Device Management-TimeSynchronization-A	DM-TS-A
Device Management-AutomaticTimeSynchronization-A	?
Device Management-TimeSynchronization-B	DM-TS-B
Device Management-UTCTimeSynchronization-A	DM-UTC-A
Device Management-UTCTimeSynchronization-B	DM-UTC-B
Device Management-ReinitializeDevice-B	DM-RD-B
Device Management-Backup and Restore-B	DM-BR-B
Device Management-Restart-B	DM-R-B
Device Management-List Manipulation-B	DM-LM-B
Device Management-Object Creation and Deletion-B	DM-OCD-B

3.3.6 Network Management BIBBs

Network Management-Connection Establishment-A	NM-CE-A
Network Management-Connection Establishment-B	NM-CE-B
Network Management-Router Configuration-A	NM-RC-A
Network Management-Router Configuration-B	NM-RC-B

3.4 Segmentation Capability:


- Segmented requests supported Window Size 16
- Segmented responses supported Window Size 16

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	20 OF 36

3.5 Standard Object Types Supported:

3.5.1 Standard Object Types Supported: Accumulator-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Device Type Reliability Prescale Value_Change_Time Value_Before_Change Value_Set Pulse_Rate High_Limit Low_Limit Limit_Monitoring_Interval Notification_Class Time_Delay Limit_Enable Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Description Device Type Prescale Value_Set Pulse_Rate High_Limit Low_Limit Limit_Monitoring_Interval Time_Delay Limit_Enable Event_Enable	-


	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	21 OF 36

3.5.2 Standard Object Types Supported: Analog-Input-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Device Type Reliability Update_Interval Min_Pres_Value Max_Pres_Value Resolution COV_Increment Time_Delay Notification_Class High_Limit Low_Limit Deadband Limit_Enable Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value COV_Increment Time_Delay High_Limit Low_Limit Deadband Limit_Enable Event_Enable	-

3.5.3 Standard Object Types Supported: Analog-Output-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Device Type Reliability Min_Pres_Value Max_Pres_Value Resolution COV_Increment Time_Delay Notification_Class High_Limit Low_Limit Deadband Limit_Enable Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value COV_Increment Time_Delay High_Limit Low_Limit Deadband Limit_Enable Event_Enable	-


	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	22 OF 36

3.5.4 Standard Object Types Supported: Analog-Value-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description Reliability Priority_Array Relinquish_Default COV_Increment Time_Delay Notification_Class High_Limit Low_Limit Deadband Limit_Enable Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value COV_Increment Time_Delay High_Limit Low_Limit Deadband Limit_Enable Event_Enable	-


3.5.5 Standard Object Types Supported: Averaging Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Minimum_Value_Timestamp Variance_Value Maximum_Value_Timestamp Description	Attempted_Samples Window_Interval Window_Samples	-

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	23 OF 36


3.5.6 Standard Object Types Supported: Binary-Input-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Device_Type Reliability Inactive_Text Active_Text Change_Of_State_Time Change_Of_State_Count Time_Of_State_Count_Reset Elapsed_Active_Time Time_Of_Active_Time_Reset Time_Delay Notification_Class Alarm_Value Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value Time_Delay Event_Enable	-

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	24 OF 36

3.5.7 Standard Object Types Supported: Binary-Output-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Device_Type Reliability Inactive_Text Active_Text Change_Of_State_Time Change_Of_State_Count Time_Of_State_Count_Reset Elapsed_Active_Time Time_Of_Active_Time_Reset Minimum_Off_Time Minimum_On_Time Time_Delay Notification_Class Feedback_Value Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value Time_Delay Event_Enable	-

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	25 OF 36

3.5.8 Standard Object Types Supported: Binary-Value-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description Reliability Inactive_Text Active_Text Change_Of_State_Time Change_Of_State_Count Time_Of_State_Count_Reset Elapsed_Active_Time Time_Of_Active_Time_Reset Minimum_Off_Time Minimum_On_Time Priority_Array Relinquish_Default Time_Delay Notification_Class Alarm_Value Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value Time_Delay Event_Enable	-


3.5.9 Standard Object Types Supported: Calendar-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description	Date_List	-

3.5.10 Standard Object Types Supported: Command

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Action_Text	Present_Value Action Action_Text	-

3.5.11 Standard Object Types Supported: Device-Object

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	26 OF 36


Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
N/A	N/A	Location Description Max_Segments_Accepted Local_Time Local_Date UTC_Offset Daylight_Savings_Status APDU_Segment_Timeout Time_Synchronization_Recipients Configuration_Files Last_Restore_Time Backup_Failure_Timeout Active_COV_Subscriptions		-

3.5.12 Standard Object Types Supported: Event Enrollment Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description		-

3.5.13 Standard Object Types Supported: File

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description	File_Size Archive	-


	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	27 OF 36

3.5.14 Standard Object Types Supported: Group

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description		-

3.5.15 Standard Object Types Supported: Loop

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Reliability Update_Interval Proportional_Constant Proportional_Constant_Units Integral_Constant Integral_Constant_Units Derivative_Constant Derivative_Constant_Units Bias Maximum_Output Minimum_Output COV_Increment Time_Delay Notification_Class Error_Limit Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Proportional_Constant Integral_Constant Derivative_Constant Bias Maximum_Output Minimum_Output	-


	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	28 OF 36

3.5.16 Standard Object Types Supported: Multistate-Input-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Device_Type Reliability State_Text Time_Delay Notification_Class Alarm_Values Fault_Values Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value Time_Delay Alarm_Values Fault_Values Event_Enable	-

3.5.17 Standard Object Types Supported: Multistate-Output-Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Device_Type Reliability State_Text Time_Delay Notification_Class Feedback_Value Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value Time_Delay Event_Enable	-

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	29 OF 36

3.5.18 Standard Object Types Supported: Multistate-Value-Object


Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description Reliability State_Text Priority_Array Relinquish_Default Time_Delay Notification_Class Alarm_Values Fault_Values Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value Time_Delay Alarm_Values Fault_Values Event_Enable	-

3.5.19 Standard Object Types Supported: Notification Class Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description		-

3.5.20 Standard Object Types Supported: Program

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Reason_For_Halt Description_Of_Halt Program_Location Description Instance_Of Reliability	Program_Change	-


	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	30 OF 36

3.5.21 Standard Object Types Supported: Pulse Converter

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input type="checkbox"/>	<input type="checkbox"/>	Description Input_Reference Reliability COV_Increment COV_Period Notification_Class Time_Delay High_Limit Low_Limit Deadband Limit_Enable Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Present_Value Adjust_Value Count_Before_Change	-

3.5.22 Standard Object Types Supported: Schedule Object

Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description Weekly_Schedule Exception_Schedule	Weekly_Schedule Exception_Schedule	-

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	31 OF 36

3.5.23 **Standard Object Types Supported: Trendlog Object**


Dynamically Creatable	Dynamically Deleteable	Optional Properties Supported	Writable Properties	Proprietary Properties
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Description Start_Time Stop_Time Log_DeviceObjectProperty Log_Interval COV_Resubscription_Interval Client_COV_Increment Notification_Threshold Records_Since_Notification Last_Notify_Record Notification_Class Event_Enable Acked_Transitions Notify_Type Event_Time_Stamps	Log_Enable Start_Time Stop_Time Log_Interval Record_Count	-

3.6 Device Address Binding :

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) Yes No

3.7 Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ASTM 878.1, 2.5 Mb. ARCNET (Clause 8)
- ASTM 878.1, RS-485 ARCNET (Clause 8) baud rate(s) _____
- MS/TP master (Clause 9), baud rate(s): _____
- MS/TP slave (Clause 9), baud rate(s): _____
- Point-To-Point, EIA 232 (Clause 10), baud rate(s): max. EIA 232
- Point-To-Point, modem, (Clause 10), baud rate(s): 115200 baud / max. modem
- LonTalk, (Clause 11), medium: _____
- Other: _____

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	32 OF 36


3.8 Networking Options:

- Router, Clause 6 - BACnet/IP-PTP.
- Annex H, BACnet Tunneling Router over IP
- BACnet Broadcast Management Device (BBMD)
 - Does the BBMD support registrations by Foreign Devices? Yes No

3.9 Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

- ANSI X3.4 / UTF8
- IBM™/Microsoft™ DBCS
- ISO 8859-1
- ISO 10646 (UCS-2)
- ISO 10646 (ICS-4)
- JIS C 6226

	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	33 OF 36

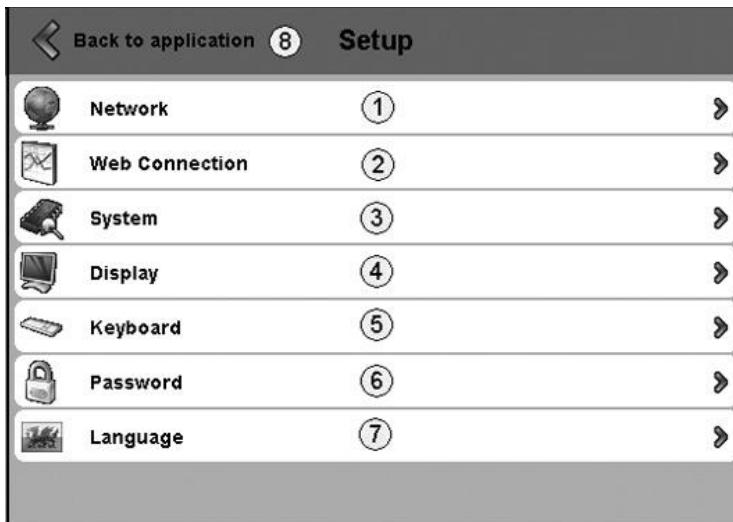
4 HOW TO FIND AND MODIFY THE UNIT IP ADDRESS


The "Setup" display is only possible on the unit touch screen.

To access the main configuration menu, press and hold anywhere on the screen (excluding buttons or text fields) for about 4 seconds. The configuration menu can be accessed at any time. By default, access to the menu is not password-protected.

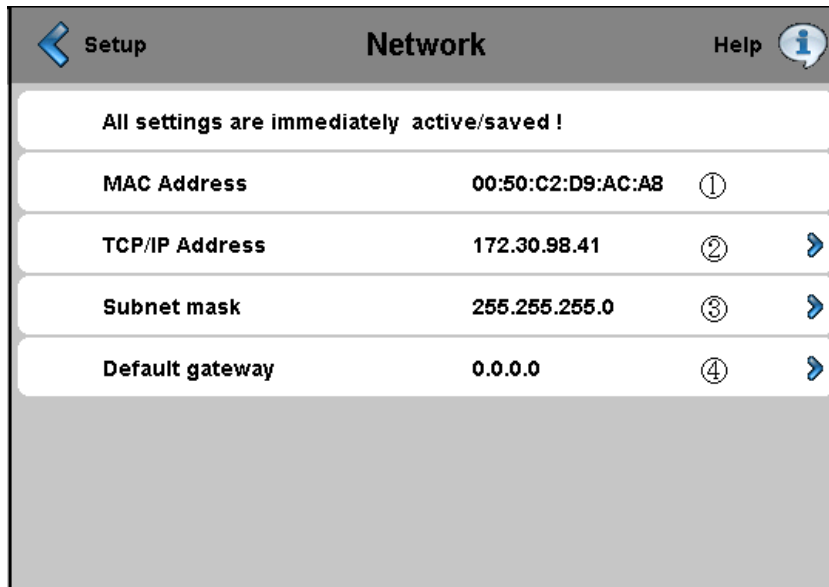
The main configuration screen permits access to the various unit parameters:

1. Network
2. Web connection



	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	34 OF 36

In the main configuration, menu press on the "Network" field to display the screen below.



1 MAC address (read only)

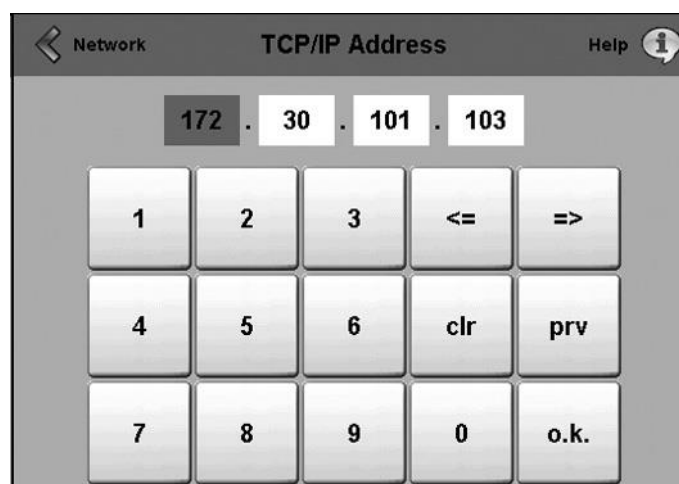
2 IP address

3 Subnet mask

4 Default gateway

IMPORTANT: You must request an IP address, the subnet mask and the default gateway from the system administrator before connecting the unit to the local Ethernet network.

Press the "TCP/IP Address" field.



Enter the new address and validate it by pressing "OK". Proceed in the same way with the other network parameters.

Once all the parameters have been specified, return to the application by pressing the "Back to application" field. The confirmation dialog is displayed. Press "Save" to confirm or "Revert" to discard changes.



ECG-UG-17-006

REVISION

DATE

PAGE

AquaCIAT CALEO -
BACnet Option

Rev B

09/02/2018


35 OF 36

Save Changes

Some changes need to be saved!

What do you want to do?



	ECG-UG-17-006	REVISION	DATE	PAGE
	AquaCIAT CALEO - BACnet Option	Rev B	09/02/2018	36 OF 36

5 BACNET IP COMMUNICATION PROBLEM

The unit does not respond to the Building Manager System (BMS).

Possible causes :

- The BACnet activation dongle is not detected by the Heat-pump application
- The Ethernet cable is not correctly connected
- Network parameters are not correct (see Network IP/Mask/Gateway configuration)
- There is an IP router between the equipment and the BMS
- BACnet Enable parameter in configuration menu is set to No.

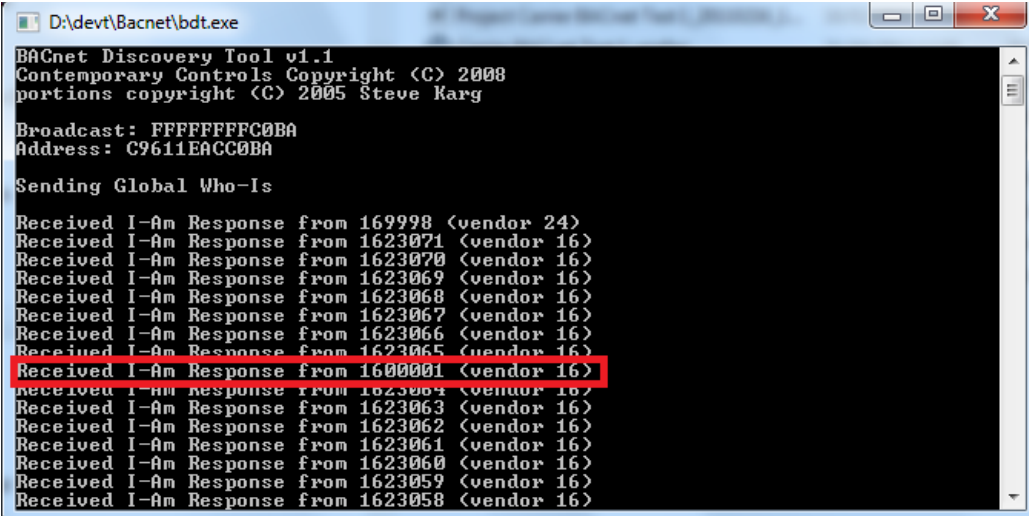
Checks to be made:

- Open the metal casing of the Touch Pilot controller and verify that the « blue » BACnet dongle is correctly connected.
- On the Ethernet connector, verify that the green LED is ON and Orange LED is blinking.
- Open a command window under Windows (Start, Execute, type "cmd"<Enter), type the command "ping" followed by the equipment IP address. The equipment must respond.
- Open the Touch Pilot Configuration menu (Advanced User password required) and check BACnet parameters.

In order to verify the connection, you need to have any BDT software (BACnet Discovery Tool) installed. This software will allow you to display the list of devices connected to the BACnet network, including the physical names and instance numbers.

Once the BDT software is installed, perform the following steps:

1. Run the BDT software and execute the "Who Is" command.
2. A list of devices connected to the BACnet network will be displayed.
3. Find the required device according to the BACnet device instance configured, i.e. 1600001.



```

D:\devt\Bacnet\bdtd.exe
BACnet Discovery Tool v1.1
Contemporary Controls Copyright (C) 2008
portions copyright (C) 2005 Steve Karg

Broadcast: FFFFFFFFC0BA
Address: C9611EACC0BA

Sending Global Who-Is

Received I-Am Response from 169998 (vendor 24)
Received I-Am Response from 1623071 (vendor 16)
Received I-Am Response from 1623070 (vendor 16)
Received I-Am Response from 1623069 (vendor 16)
Received I-Am Response from 1623068 (vendor 16)
Received I-Am Response from 1623067 (vendor 16)
Received I-Am Response from 1623066 (vendor 16)
Received I-Am Response from 1623065 (vendor 16)
Received I-Am Response from 1600001 (vendor 16)
Received I-Am Response from 1623064 (vendor 16)
Received I-Am Response from 1623063 (vendor 16)
Received I-Am Response from 1623062 (vendor 16)
Received I-Am Response from 1623061 (vendor 16)
Received I-Am Response from 1623060 (vendor 16)
Received I-Am Response from 1623059 (vendor 16)
Received I-Am Response from 1623058 (vendor 16)

```