DAIKIN APPLIED EUROPE S.p.A.

BAS integration guide

BACnet®protocol

Doc. Name:
D-EIGOC00108-22_04EN

Product Name:
ADK (Digital AHU)

Control software name:
DSTREAM

Table of contents

1. Introduction

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

Microtech III and Microtech 4 are suitable for network integration. Data points accessible from a BACnet network are made available to a BAS provided that the proper communication module are installed / activated.

Communication settings and the BACnet® properties with corresponding controller data points are described.
BACnet® terms are not defined. Refer to the respective specifications for definitions and details.

2. About this document

2.1 Revision History

Version	Date	Description
D-EIGOCAH00900103-21EN	18/03/2021	First edition
D-EIGOCAH00900103-21_01EN	08/11/2024	Revision
D-EIGOC00108-22_02EN_ADK	16/09/2025	Revision

2.2 Notice

2.3 Before starting

Application range

This document refers to the following components:

Microtech III	Controller
Microtech 4	Controller
POL908.00/STD	BACnet IP module
POL904.00/STD	BACnet MS/TP module

Users

Users of this document are intended to be:

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

Conventions

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

Abbreviation

BACnet	**B**uilding **A**utomation and **C**ontrol **Net**work
BSP	**B**oard **S**upport **P**ackage (operating system)

References

- ANSI/ ASHRAE 135-2004. “**BACnet** - A Data Communication Protocol for Building Automation and Control Networks”. American Society of Heating, Refrigerating and Air-Conditioning Engineers - www.ashrae.org.
- Siemens Building Technologies - CB1P3933en - **BACnet** communication modules

3. Safety information

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

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

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

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

4. Commission this unit in a BACnet network

4.1 General information

Compatibility

The Microtech controllers are tested according to the BACnet Testing Laboratory (BTL) Test Plan. They are designed to meet the requirements of the BACnet Standard as stated in the Protocol Implementation and Conformance Statement (PICS). However, they are not BTL listed. The PICS is located at the end of the present document.

Unit controller is a Microtech III or a POL638

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

Unit controller is a Microtech 4

a) Microtech 4 controller can be integrated in an interoperable BACnet network provided that it is equipped with the proper communication module. See “Communication modules” section below in this page.

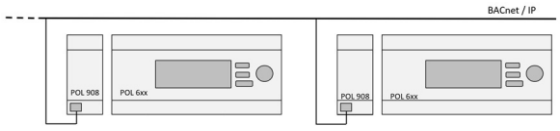
Communication modules

Available communication modules to configure Microtech controllers in BACnet network are:

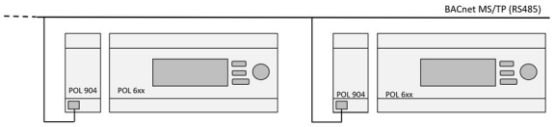
1. **BACnet/IP** (dedicated network or shared Ethernet LAN)
2. **BACnet MS/TP** (Master/Slave Token Passing).

Both communication modules comply with the standardized profile for BACnet equipment **(B-AAC BACnet Advanced Application Controller).**

BACnet/IP (POL908)

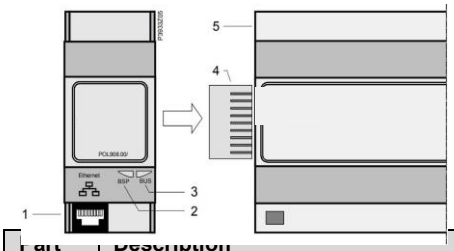


BACnet MS/TP (POL904)



4.2 BACnet IP module (POL908)

Module description



Part	Description
1	Ethernet interface 10/100 Mbit (IEEE 802.3U), RJ45 plug, 8-pin.
2	Status display "BSP" (Board Support Package).
3	Status display "BUS" (bus connections / bus traffic o.k.).
4	Plug connection "Communication extension bus".
5	Microtech III controller.

BSP Led

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

BUS Led

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

Module connection

Step	Action
1	Power off the controller
2	Connect POL908 module to the controller via plug connection (part 4).
3	Connect the TCP/IP bus cable to the POL908.
4	Power on the controller

Configuration

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

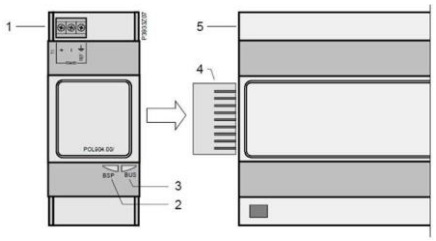
Parameter	Default value
Device Instance	1
UDP Port Number	47808 (BAC0)
DHCP(1)	OFF
Given IP Address[2]	127.0.0.1
Given IP Subnet Mask[2]	255.255.255.000
Given Gateway Address[2]	127.0.0.1
Unit Support	English
NC Dev 1	0
NC Dev 2	0

(1) Verify whether DHCP should or should not be enabled. If not, obtain the IP Subnet Mask of the shared network from the network administrator. Then, obtain static IP Addresses for all MicroTech III Unit Controllers you are integrating into the shared network. Finally, obtain the address of an IP Router to use for sending IP messages to and from the BACnet IP subnets.

(2) These addresses are used if DHCP (Dynamic Host Configuration Property) is set to Off. For changes to these parameters to take effect, use the keypad/display and set Apply Changes on the BACnet IP Setup menu to Yes. This will cause the power on the unit controller to reset.

4.3 BACnet MS/TP module (POL904.00/STD)

Module description



Part	Description
1	Interface RS485, plug-in terminals with screw/terminal connections.
2	Status display "BSP" (Board Support Package).
3	Status display "BUS" (bus connections / bus traffic o.k.).
4	Plug connection "Communication extension bus".
5	Microtech III controller.

BSP Led

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

BUS Led

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

Module connection

Step	Action
1	Power off the controller
2	Connect POL904 module to the controller via plug connection (part 4).
3	Connect the TCP/IP bus cable to the POL908.
4	Power on the controller

Configuration procedure

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

Configuration parameters

Parameter	Default value	Notes	
Device Instance	variable	The last 8 digits are computed from the production number and date code.	
MSTP Address	24 (0x18)	Cycle power after changing it for the changes to take effect.	
Baud Rate	38400	Baud rate	Number of devices
		76800	64
		38400	32
		19200 and lower	Value not recommended
Max Master	127	Recommended value is the number of MS/TP devices (device address) + 1	
Max Info Frames	1	1, unless device generates high-priority events (alarm, COV, client functionality).	
Unit Support	English		

5. BACnet integration list

The following tables contains the complete list of BACnet data points properties available from the AHU Unit Controller. Different BACnet objects combination will be available based on different AHU configurations.

Tables listed in this section are divided according to the particular BACnet Object Type.

Caution: improper use of the following data and set points can lead to unwanted or unexpected behavior of the unit.

5.1 Analog Input

Object Name	Object Instance	Object Description	Dimension	Read/Write
SupplyTmp	45150	Supply air temperature	°C	R
RmUTmp1	33923	Room unit temperature	°C	R
ReturnAirTmp	28256	Return air temperature	°C	R
OutTmp	53218	Outside air temperature	°C	R
PreHeatTemp	29568	Pre-Heating/Pre cooling/Pre coil temperature	°C	R
ExhaustTmp	40895	Exhaust temperature	°C	R
SupplyPrs	20400	Supply air pressure	Pa	R
ReturnPrs	39576	Return air pressure	Pa	R
SupplyFlow	9497	Supply air flow	m^3/h	R
ReturnFlow	38593	Return air flow	m^3/h	R
HumOutside	5238	Outside air relative humidity	%rH	R
RoomHum	37799	Room relative humidity	%rH	R
SplyHumidity	52165	Supply air relative humidity	%rH	R
MT4HumSnsr	63290	Supply / Room /Outside humidity sensor (X8)	%rH	R
AirQlty	3737	Air quality (CO_2) (Nodes)	ppm	R
AirQualityMT4	21026	Air quality (CO_2) sensor (X8)	ppm	R
ERQ1Load	19419	ERQ1 actual load	%	R
ERQ2Load	42249	ERQ2 actual load	%	R
ERQ3Load	3928	ERQ3 actual load	%	R
ERQ4Load	26764	ERQ4 actual load	%	R
ERQGlobalLoad	36987	Global ERQ actual load	%	R
RoomPressure	4877	Room pressure (Differential transducer) (X8)	Pa	R
SupplyFilterStep1Fault	20923	Supply filter 1 alarm	Pa	R
SupplyFilterStep2Fault	25048	Supply filter 2 alarm	Pa	R
SupplyFilterStep3Fault	29177	Supply filter 2 alarm	Pa	R
SupplyFilterStep4Fault	286	Supply filter 4 alarm	Pa	R
SupplyFilterStep1Warning	26220	Supply filter 1 warning	Pa	R
SupplyFilterStep2Warning	22031	Supply filter 2 warning	Pa	R
SupplyFilterStep3Warning	17966	Supply filter 3 warning	Pa	R
SupplyFilterStep4Warning	14025	Supply filter 4 warning	Pa	R

ReturnFilterStep1Fault	10215	Return filter 1 alarm	Pa	R
ReturnFilterStep2Fault	6020	Return filter 2 alarm	Pa	R
ReturnFilterStep1Warning	51509	Return filter 2 warning	Pa	R
ReturnFilterStep2Warning	63830	Return filter 2 warning	Pa	R
AddTmpX8	57540	Optional temp probe 1 (X8)	°C	R
AddTmpX9	61669	Optional temp probe 2 (X9)	°C	R
AddTmpX10	46565	Optional temp probe 3 (X10)	°C	R
AddTmpX11	42436	Optional temp probe 4 (X11)	°C	R
VOCSensor	58004	VOC sensor	pbm	R
AddVOCX8	58004	Optional VOC Probe (X8)	pbm	R
SupplyOptPrs	39865	Supply optional transducer	Pa	R
ReturnOptPrs	39570	Return optional transducer	Pa	R
FreshAirDmpFB	56674	Fresh air damper feedback	%	R
ExhAirDmpFB	33657	Exhaust air damper feedback	%	R
SupShutOffDmpFB	1147	Supply shutoff damper feedback	%	R
RetShutOffDmpFB	27101	Return shutoff damper feedback	%	R
ByPassDmpFB	57985	Bypass damper feedback	%	R
MixDmpFB	61925	Mixing damper feedback	%	R
OptSenX1	47536	Optional sensor / input (X1)	%rH,ppm,ppb, pa , °C	R
OptSenX2	35283	Optional sensor / input (X2)	%rH,ppm,ppb, pa , °C	R
OptSenX3	39410	Optional sensor / input (X3)	%rH,ppm,ppb, pa , °C	R
OptSenX4	59669	Optional sensor / input (X4)	%rH,ppm,ppb, pa , °C	R
OptSenX5	63796	Optional sensor / input (X5)	%rH,ppm,ppb, pa , °C	R
OptSenX6	51543	Optional sensor / input (X6)	%rH,ppm,ppb, pa , °C	R
OptSenX7	55670	Optional sensor / input (X7)	%rH,ppm,ppb, pa , °C	R
PlenumDp	16005	Plenum differential pressure	pa	R
CustomProbeX8	50932	Custom name probe (X8)	%rH,ppm,ppb, pa	R
MBRoomProbeTemp	31285	Modbus room probe 1 temperature	°C	R
MBRoomProbe2Temp	63099	Modbus room probe 2 temperature	°C	R
MBRoomProbe3Temp	45848	Modbus room probe 3 temperature	°C	R
MBRoomProbe4Temp	30992	Modbus room probe 4 temperature	°C	R
MBRoomProbeCalTemp	52013	Modbus room temperature calculated	°C	R
MBRoomProbeRelHum	41136	Modbus room probe 1 relative humidity	%rH	R
MBRoomProbe2RelHum	50573	Modbus room probe 2 relative humidity	%rH	R
MBRoomProbe3RelHum	13756	Modbus room probe 3 relative humidity	%rH	R
MBRoomProbe4RelHum	50537	Modbus room probe 4 relative humidity	%rH	R
MBRoomProbeCalRelHum	60264	Modbus room relative humidity calculated	%rH	R
MBRoomProbeCo2	41521	Modbus room probe 1 air quality (CO2)	ppm	R
MBRoomProbe2Co2	55000	Modbus room probe 2 air quality	ppm	R

		(CO_2)		
MBRoomProbe3Co2	31881	Modbus room probe 3 air quality (CO_2)	ppm	R
MBRoomProbe4Co2	7005	Modbus room probe 4 air quality (CO_2)	ppm	R
MBRoomProbeCalCo2	25873	Modbus room air quality CO_2 calculated	ppm	R
MBRoomDewPoint	41535	Modbus room probe 1 dew point	°C	R
MBRoom2DewPoint	16674	Modbus room probe 2 dew point	°C	R
MBRoom3DewPoint	11879	Modbus room probe 3 dew point	°C	R
MBRoom4DewPoint	12957	Modbus room probe 4 dew point	°C	R
MBRoomProbeCalDewPoint	49437	Modbus room dew point calculated	°C	R
CoilTmp	42892	Coil temperature	°C	R
CoilHum	55496	Coil relative humidity	%rH	R

Table 1. Analog Input list

5.1 Analog Output

Object Name	Object Instance	Object Description	Dimension	Read/Write
SplyFanVarPos	59037	Supply fan output	%	R
ExhFanVarPos	40119	Return fan output	%	R
HumidityCtrlPos	39618	Humidifier output	%	R
ElectricalHtgPos	37442	Electrical heating output / Post heating	%	R
PostHtgWtrSignal	33796	Post heating water output	%	R
PostHtgElecSignal	34933	Electrical / Post heating electrical output	%	R
HrecDampPos	42156	Mixing damper output	%	R
HrecPos	24312	Recovery device output	%	R
CoolingPos	30925	Cooling coil output	%	R
HeatingPos	26209	Heating coil output	%	R
FanTempCompPos	62755	Fan temperature compensation output	%	R
PreHtgPos	62468	Pre-Heating output	%	R
PreHtgWtrSignal	18787	Pre heating/Pre cooling/Pre coil water output	%	R
PreHtgElecSignal	60586	Pre heating electrical output	%	R
SplyShutOffDmpSignal	64026	Supply shutoff damper signal	%	R/W
RtrnShutOffDmpSignal	59501	Return shutoff damper signal	%	R/W
FreshAirDmpSignal	50404	Fresh air damper signal	%	R/W
ExhAirDmpSignal	40983	Exhaust sir damper signal	%	R/W
MixAirDmpSignal	11376	Mixing air damper signal	%	R/W
ByPassDmpSignal	50562	Bypass damper signal	%	R/W
PlenDmpPos	15147	Plenum damper signal	%	R
ChillerSpvOutput	30192	Chiller setpoint output	%	R
SplyFan1Signal	23941	Supply fan 1 output signal	%	R
SplyFan2Signal	34055	Supply fan 2 output signal	%	R
SplyFan3Signal	15718	Supply fan 3 output signal	%	R
SplyFan4Signal	9250	Supply fan 4 output signal	%	R
SplyFan5Signal	40003	Supply fan 5 output signal	%	R
SplyFan6Signal	17601	Supply fan 6 output signal	%	R
SplyFan7Signal	64672	Supply fan 7 output signal	%	R

SplyFan8Signal	30281	Supply fan 8 output signal	%	R
ExhFan1Signal	57672	Exhaust fan 1 output signal	%	R
ExhFan2Signal	14794	Exhaust fan 2 output signal	%	R
ExhFan3Signal	33195	Exhaust fan 3 output signal	%	R
ExhFan4Signal	39151	Exhaust fan 4 output signal	%	R
ExhFan5Signal	8334	Exhaust fan 5 output signal	%	R
ExhFan6Signal	63500	Exhaust fan 6 output signal	%	R
ExhFan7Signal	16493	Exhaust fan 7 output signal	%	R
ExhFan8Signal	51844	Exhaust fan 8 output signal	%	R

Table 2. Analog Output list

5.2 Analog Values

Object Name	Object Instance	Object Description	Dimension	Read/Write
SplyFanSpvSt1Spv	52572	Supply fan setpoint or Supply fan setpoint in summer mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
SplyFanSpvEcSpv	57915	Supply fan economy setpoint or Supply fan economy setpoint in summer mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
SplyFanSpvBoostSpv	46094	Supply fan boost setpoint or Supply fan boost setpoint in summer mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
SplyFanSpvSt1SpvWi	18179	Supply fan setpoint in winter mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
SplyFanSpvEcSpvWi	8881	Supply fan economy setpoint in winter mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
SplyFanSpvBoostSpvWi	27306	Supply fan boost setpoint in winter mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
SplyFanSpvMaxForce	25092	Supply fan max force	m^3/h or Pa or %	R/W
ExhFanSpvSt1Spv	45030	Return fan setpoint /Room pressure or Return fan setpoint/ Room pressure in summer mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
ExhFanSpvEcSpv	6118	Return fan economy setpoint / Room pressure or Return fan economy setpoint / Room pressure in summer mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
ExhFanSpvBoostSpv	57303	Return fan boost setpoint / Room pressure or Return fan boost setpoint/ Room pressure in summer mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
ExhFanSpvSt1SpvWi	33574	Return fan setpoint / Room pressure in winter mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
ExhFanSpvEcSpvWi	44853	Return fan economy setpoint / Room pressure in winter mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
ExhFanSpvBoostSpvWi	50429	Return fan boost setpoint / Room pressure in winter mode (only if separate winter/summer enabled)	m^3/h or Pa or %	R/W
ExhFanSpvMaxForce	2525	Return fan max force	m^3/h or Pa or %	R/W
SplyFanActVal	56628	Supply fan actual value	m^3/h or Pa or %	R
ExhFanActVal	59694	Return fan actual value	m^3/h or Pa or %	R
SplyFanActSpv	46589	Supply fan actual setpoint	m^3/h or Pa or %	R
ExhFanActSpv	33255	Return fan actual setpoint	m^3/h or Pa or %	R
AirQSpv	22649	Air quality setpoint	ppm	R/W
OutHumAbs	16390	Outside air absolute humidity	g/kg	R
RmHumAbs	17315	Room air absolute humidity	g/kg	R
SplyHumAbs	13958	Supply air absolute humidity	g/kg	R
RmEnth	61369	Room enthalpy	kJ/kg	R

OutEnth	57226	Outside enthalpy	kJ/kg	R
SplyEnth	6972	Supply enthalpy	kJ/kg	R
RoomDewPoint	25157	Room dew point	°C	R
OutDewPoint	53849	Outside dew point	°C	R
SplyDewPoint	57646	Supply dew point	°C	R
HumSpvRelSpvDehum	11342	Dehumidification setpoint relative / Absolute	%rH, g/kg	R/W
HumSpvRelSpvHum	10627	Humidification setpoint relative / Absolute	%rH, g/kg	R/W
SplyHumLimSp	28118	Supply humidity limitation setpoint	%rH	R/W
ActCtrlValHum	38385	Actual controlled humidity	%rH	R
TmpSpvCoSpvClg	8970	Cooling setpoint	°C	R/W
TmpSpvCoSpvHtg	22817	Heating setpoint	°C	R/W
TmpSpvEcSpvClg	61866	Economy cooling setpoint	°C	R/W
TmpSpvEcSpvHtg	35713	Economy heating setpoint	°C	R/W
TmpSpvBoostSpvClg	61325	Boost cooling setpoint	°C	R/W
TmpSpvBoostSpvHtg	38310	Boost Heating setpoint	°C	R/W
ActMainSpvHtg	4018	Actual heating setpoint (depending on actual control mode)	°C	R
ActMainSpvClg	30105	Actual cooling setpoint (depending on actual control mode)	°C	R
ActTempSetpt	56276	Active temperature setpoint	°C	R
ActCtrlVal	52988	Actual controlled temperature	°C	R
PreHtgSpv	6627	Pre heating setpoint	°C	R/W
PreClgSpv	56374	Pre cooling setpoint	°C	R/W
HrecDampminFrshAir	41552	Minimum fresh air	%	R/W
SuWiSwtchCheckOutTmpDampd	24338	Outside air temp damped	°C	R
RoomUnitsOccTm	1206	Room unit presence time	h	R/W
Room Unit Offset	8926	Room unit temperature setpoint offset	°C	R/W
MaxSupplyTempSu	753	Maximum supply temperature limit in summer mode	°C	R/W
MaxSupplyTempWi	7560	Maximum supply temperature limit in winter mode	°C	R/W
MinSupplyTempSu	18262	Minimum supply temperature limit in summer mode	°C	R/W
MinSupplyTempWi	22575	Minimum supply temperature limit in winter mode	°C	R/W
SupplyFanRunHours	47818	Running hours of supply fan	h	R
ReturnFanRunHours	52983	Running hours of return fan	h	R
SetpPursuit	19448	Temperature setpoint for pursuit mode	°C	R/W
VOCSpv	14969	VOC setpoint	pbm	R/W
EcoSetpPursuit	23744	Temperature setpoint for Eco-Pursuit mode	°C	R/W
BoostSetpPursuit	41319	Temperature setpoint for Boost-Pursuitmode	°C	R/W
BandPursuit	12721	Pursuit Band	°C	R/W
DmpDelayTime	15422	Damper delay time (Duty standby)	s	R/W
RotationTime	15627	Fan rotation time (Duty standby)	h	R/W

SupplyFan1TimeDisp	39920	Supply fan 1 time (Duty standby)	h	R
SupplyFan2TimeDisp	46772	Supply fan 2 time (Duty standby)	h	R
ReturnFan1TimeDisp	14875	Return fan 1 time (Duty standby)	h	R
ReturnFan2TimeDisp	5983	Return fan 2 time (Duty standby)	h	R
Sintra.PlenumOnSpv	17984	Plenum setpoint in Sintra On mode	pa	R/W
Sintra.PlenumBoostSpv	31367	Plenum setpoint in Sintra boost mode	pa	R/W
SplyFanSpv.SintraBoost	41687	Supply fan setpoint in Sintra boost mode	m^3/h	R/W
ExhFanSpv.SintraBoost	26354	Return fan setpoint in Sintra boost mode	m^3/h	R/W
MBRoomProbeAbsHum	40525	Modbus room probe 1 absolute humidity	g/kg	R
MBRoomProbe2AbsHum	64368	Modbus room probe 2 absolute humidity	g/kg	R
MBRoomProbe3AbsHum	2881	Modbus room probe 3 absolute humidity	g/kg	R
MBRoomProbe4AbsHum	64404	Modbus room probe 4 absolute humidity	g/kg	R
MBRoomProbeCalAbsHum	54677	Modbus room probe absolute humidity calculated	g/kg	R
MBRoomProbeEnth	54939	Modbus room probe 1 enthalpy	kJ/kg	R
MBRoomProbe2Enth	13702	Modbus room probe 2 enthalpy	kJ/kg	R
MBRoomProbe3Enth	23235	Modbus room probe 3 enthalpy	kJ/kg	R
MBRoomProbe4Enth	17977	Modbus room probe 4 enthalpy	kJ/kg	R
MBRoomProbeCalEnthalpy	46521	Modbus room probe enthalpy calculated	kJ/kg	R
HtgValveAbsFlow	38866	Heating valve absolute flow (Modbus)	l/h	R
ClgValveAbsFlow	54493	Cooling valve absolute flow (Modbus)	l/h	R
Clg2ValveAbsFlow	64348	Cooling valve 2 absolute flow (Modbus)	l/h	R
ClgHtgValveAbsFlow	49765	Cooling/heating valve absolute flow (Modbus)	l/h	R
PreHValveAbsFlow	8550	Pre heating/Pre cooling/Pre coil valve absolute flow (Modbus)	l/h	R
PostHValveAbsFlow	44988	Post heating/Pre cooling/Pre coil valve absolute flow (Modbus)	l/h	R
SplyFan1Speed	32329	Supply fan 1 speed (Modbus)	RPM	R
SplyFan2Speed	42699	Supply fan 2 speed (Modbus)	RPM	R
SplyFan3Speed	19654	Supply fan 3 speed (Modbus)	RPM	R
SplyFan4Speed	2030	Supply fan 4 speed (Modbus)	RPM	R
SplyFan5Speed	49039	Supply fan 5 speed (Modbus)	RPM	R
SplyFan6Speed	26381	Supply fan 6 speed (Modbus)	RPM	R
SplyFan7Speed	57196	Supply fan 7 speed (Modbus)	RPM	R
SplyFan8Speed	21893	Supply fan 8 speed (Modbus)	RPM	R
RtrnFan1Speed	32910	Return fan 1 speed (Modbus)	RPM	R
RtrnFan2Speed	22540	Return fan 2 speed (Modbus)	RPM	R
RtrnFan3Speed	34071	Return fan 3 speed (Modbus)	RPM	R
RtrnFan4Speed	63785	Return fan 4 speed (Modbus)	RPM	R
RtrnFan5Speed	16712	Return fan 5 speed (Modbus)	RPM	R
RtrnFan6Speed	39370	Return fan 6 speed (Modbus)	RPM	R

RtrnFan7Speed	8619	Return fan 7 speed (Modbus)	RPM	R
RtrnFan8Speed	43842	Return fan 8 speed (Modbus)	RPM	R
SplyFanSpvP2PCommAlm	59879	Supply fan setpoint during peer-to-peer communication alarm	m^3/h or Pa or %	R/W
RtrnFanSpvP2PCommAlm	18352	Return fan setpoint during peer-to-peer communication alarm	m^3/h or Pa or %	R/W

Table 3. Analog Values list

5.3 Binary Inputs

Object Name	Object Instance	Object Description	State texts	Read/Write
HtgFrstDtctr	21294	Heating frost monitor	0 = OK 1 = Alarm	R
HtgPmpAlm	47847	Heating pump alarm	0 = OK 1 = Alarm	R
ElHtgAlm	4964	Electrical heating / post electrical heating alarm	0 = OK 1 = Alarm	R
HRecAlm	62931	Recovery device alarm	0 = OK 1 = Alarm	R
ClgPmpAlm	40242	Cooling pump alarm	0 = OK 1 = Alarm	R
SplyFanAlm	28757	Supply fan alarm	0 = OK 1 = Alarm	R
Sply2FanAlm	24461	Supply fan 2 alarm	0 = OK 1 = Alarm	R
Sply3FanAlm	59372	Supply fan 3 alarm	0 = OK 1 = Alarm	R
Sply4FanAlm	65192	Supply fan 4 alarm	0 = OK 1 = Alarm	R
Sply5FanAlm	18121	Supply fan 5 alarm	0 = OK 1 = Alarm	R
Sply6FanAlm	40523	Supply fan 6 alarm	0 = OK 1 = Alarm	R
Sply7FanAlm	9770	Supply fan 7 alarm	0 = OK 1 = Alarm	R
Sply8FanAlm	44227	Supply fan 8 alarm	0 = OK 1 = Alarm	R
ExhFanAlm	55865	Exhaust fan alarm	0 = OK 1 = Alarm	R
Exh2FanAlm	10029	Exhaust fan 2 alarm	0 = OK 1 = Alarm	R
Exh3FanAlm	40780	Exhaust fan 3 alarm	0 = OK 1 = Alarm	R
Exh4FanAlm	34312	Exhaust fan 4 alarm	0 = OK 1 = Alarm	R
Exh5FanAlm	15977	Exhaust fan 5 alarm	0 = OK 1 = Alarm	R
Exh6FanAlm	59115	Exhaust fan 6 alarm	0 = OK 1 = Alarm	R
Exh7FanAlm	24202	Exhaust fan 7 alarm	0 = OK 1 = Alarm	R
Exh8FanAlm	54371	Exhaust fan 8 alarm	0 = OK 1 = Alarm	R
FilterAlm	13699	Filter alarm	0 = OK 1 = Alarm	R
SplyFilterAlm	49203	Supply filter alarm	0 = OK 1 = Alarm	R
ExhFilterAlm	45320	Exhaust filter alarm	0 = OK 1 = Alarm	R

FireAlm	28514	Fire alarm	0 = OK 1 = Alarm	R
ExtCtrl1	11643	Unit Enable Switch	0 = Standby 1 = On	R
EmergencyStop	9864	Emergency stop	0 = Alarm 1 = OK	R
ERQ1OnOff	19724	ERQ 1 On/Off state	0 = Off 1 = On	R
ERQ2OnOff	33772	ERQ 2 On/Off state	0 = Off 1 = On	R
ERQ3OnOff	50764	ERQ 3 On/Off state	0 = Off 1 = On	R
ERQ4OnOff	3597	ERQ 4 On/Off state	0 = Off 1 = On	R
ERQ1Defrost	48775	ERQ 1 Defrost state	0 = No Defrost 1 = Defrost	R
ERQ2Defrost	30450	ERQ 2 Defrost state	0 = No Defrost 1 = Defrost	R
ERQ3Defrost	12577	ERQ 3 Defrost state	0 = No Defrost 1 = Defrost	R
ERQ4Defrost	63033	ERQ 4 Defrost state	0 = No Defrost 1 = Defrost	R
ERQ 1 alarm	610	ERQ 1 alarm	0 = OK 1 = Alarm	R
ERQ 2 alarm	16951	ERQ 2 alarm	0 = OK 1 = Alarm	R
ERQ 3 alarm	1943	ERQ 3 alarm	0 = OK 1 = Alarm	R
ERQ 4 alarm	53206	ERQ 4 alarm	0 = OK 1 = Alarm	R
PreHtgWtrPmpOnOff	14492	Pre heating/Pre cooling/Pre coil pump command	1 = Off 2 = On	R
PostHtgWtrPmpOnOff	47780	Post heating pump command	1 = Off 2 = On	R
ElFilAlm	43256	Electrostatic filter alarm	0 = OK 1 = Alarm	R
R32Leakage1	48254	R32 leakage 1 alarm	0 = OK 1 = Alarm	R
R32Leakage2	35869	R32 leakage 2 alarm	0 = OK 1 = Alarm	R
R32Leakage3	39996	R32 leakage 3 alarm	0 = OK 1 = Alarm	R
R32Leakage4	60635	R32 leakage 4 alarm	0 = OK 1 = Alarm	R
LowFlowThrAlm	41645	Low flow threshold alarm	0 = OK 1 = Alarm	R
ElectricalPreheatingFault	57484	Pre-heating electrical alarm	0 = OK 1 = Alarm	R
FreshAirDmpFBDevAlm	23983	Fresh air damper feedback deviation alarm	0 = OK 1 = Alarm	R
ExhAirDmpFBDevAlm	17725	Exhaust air damper feedback deviation alarm	0 = OK 1 = Alarm	R
SplyShutoffFBDevAlm	17941	Supply shutoff air damper feedback deviation alarm	0 = OK 1 = Alarm	R

RtrnShutoffFBDevAlm	55397	Return shutoff air damper feedback deviation alarm	0 = OK 1 = Alarm	R
ByPassDmpFBDevAlm	25342	Bypass damper feedback deviation alarm	0 = OK 1 = Alarm	R
MixingDmpFBDevAlm	33492	Mixing damper feedback deviation alarm	0 = OK 1 = Alarm	R
SplyFanDevAlm	24475	Supply fan Setpoint deviation alarm	0 = OK 1 = Alarm	R
ExhFanDevAlm	58195	Return fan Setpoint deviation alarm	0 = OK 1 = Alarm	R
TempDevAlm	45683	Temperature setpoint deviation alarm	0 = OK 1 = Alarm	R
HumDevAlm	11277	Humidification setpoint deviation alarm	0 = OK 1 = Alarm	R
DehumDevAlm	21916	Dehumidification setpoint deviation alarm	0 = OK 1 = Alarm	R
SplyTmpDevAlm	65517	Supply temperature deviation alarm	0 = OK 1 = Alarm	R
PreHtgWtrPmpAlm	1642	Pre heating pump alarm	0 = OK 1 = Alarm	R
PostWtrPmpAlm	12835	Post heating pump alarm	0 = OK 1 = Alarm	R
ClgHtgPmpAlm	26521	Cooling heating pump alarm	0 = OK 1 = Alarm	R
GenAlm	41868	AHU General alarm *Note: Objects AlmOutHigh (5714) and GenAlm (41868) provide the same functionality.*	0 = Normal 1 = Alarm	R
UVLampFeedback	39271	UV lamp feedback alarm	0 = Normal 1 = Alarm	R
P2PCommAlm	23880	Peer-to-peer communication alarm	0 = Normal 1 = Alarm	R

Table 4. Binary Inputs list

5.4 Binary Outputs

Object Name	Object Instance	Object Description	State texts	Read/Write
DamperSplyOnOff	6170	Fresh air damper command	0 = Off 1 = On	R
HumidityCtrlCmdOnOff	18044	Humidifier command	0 = Off 1 = On	R
CoolingPmpCmdOnOff	10276	Cooling pump command	0 = Off 1 = On	R
HeatingPmpCmdOnOff	10264	Heating pump command	0 = Off 1 = On	R
AlmOutHigh	5714	AHU General alarm output *Note: Objects AlmOutHigh (5714) and GenAlm (41868) provide the same functionality.*	0 = Normal 1 = Alarm	R

Table 5. Binary Outputs list

5.5 Schedule

Object Name	Object Instance	Object Description	State texts	Read/Write
ScheduleSt	31059	Time scheduler actual state	1 = Off 2 = On 3 = Ventilation 4 = Economy 5 =Boost	R

Table 6. Schedule list

5.6 Multistate Outputs

Object Name	Object Instance	Object Description	State texts	Read/Write
SplyFanCmdSt	21928	Supply fan command	1 = Off 2 = On	R
ExhFanCmdSt	14719	Exhaust fan command	1 = Off 2 = On	R

Table 7. Multistate Outputs list

5.7 Multistate Value

Object Name	Object Instance	Object Description	State texts	Read/Write
ActOpMode	6080	Actual operating mode	1 = Off 2 = On 3 = Ventilation 4 = Economy 5 = Boost	R
ActOpSta	32321	Present unit status	1 = NA	R
			2 = Fire	
			3 = Emergency	
			4 = Fault	
			5 = Manual	
			6 = NA	
			7 = Alarm	
			8 = Panel switch	
			9 = Local Switch	
			10 = NA	
			11 = BMS	
			12 = Schedular	
			13 = Occupancy	
			14 = NA	
			15 = NA	
			16 = NA	
			17 = Ready 18 = P2P	
AckAlmPls	39130	Alarm acknowledge (**Note!** This object is used to acknowledge all alarms in the controller)	1 = Off 2 = On	R/W
SuWiSwtchCheckState	24616	Summer Winter mode	1 = Winter 2 = Summer	R
AlmCl0	46769	Danger alarm (A)	1 = Normal 2 = On	R
AlmCl1	42640	Critical alarm (A)	1 = Normal 2 = On	R
AlmCl2	38643	Low alarm (B)	1 = Normal 2 = On	R
AlmCl3	34514	Warning alarm (C)	1 = Normal 2 = On	R
NetworkCtrl	24562	Network source (iTM)	1 = Off 2 = On	R/W
NetworkCtrlBMS	26007	Network source	1 = Auto 2 = Off 3 = On 4 = Ventilation 5 = Economy	R/W

			6 = Boost	
SuWiNetworkChgover	28594	Summer/Winter network changeover command	1 = Winter 2 = Summer	R/W
FireDamperCmd	59712	Fire damper command	1 = Close 2 = Open	R
ExhEngUnit	43819	Return air engineering Unit	1 = % 2 = Pa 3 = m^3/h	R

Object Name	Object Instance	Object Description	State texts	Read/Write
SplyEngUnit	54155	Supply air engineering Unit	1 = % 2 = Pa 3 = m^3/h	R
HumEngUnit	13725	Humidity engineering unit	1 = %rH 2 = g/kg	R
Pre-Htg Electrical	25214	Pre-heating electrical command	1 = Off 2 = Step 1 3 = Step 2	R
Electrical Heating State/Post Heating	58176	Electrical heating command	1 = Off 2 = Step 1 3 = Step 2	R
ClgDxStages	9333	Cooling Dx actual stage	1 = Off 2 = Stage 1 3 = Stage 2	R
CommTestEn	1708	Enable Test	1 = No 2 = Yes	R/W
SuWiChgSrc	9493	Set source for summer/winter changeover	1 = Auto 2 = HMI 3 = BMS (BACnet)	R/W
TimeSchedSt	12316	Indicates time scheduler active mode	1 = On 2 = Off 3 = Ventilation 4 = Economy 5 = Boost	R
ActFanStep	28279	Indicates the active fan step	1 = Off 2 = Stage 1 3 = Stage 2 4 = Stage 3	R
ActCtrlMode	28561	Indicates mode for the regulation control	1 = Room 2 = Exhaust 3 = Supply	R
OpModeTspCopyUnitPls	33544	When set to On, time schedule settings made in “Monday” are automatically copied into the other weekdays.	1 = Off 2 = On	R/W
ElFilAlmType	59471	Electrostatic filter alarm type	1 = Warning 2 = Fault	R/W
SintraModeSwitch	21786	Sintra mode	1 = Off 2 = On 3 = Boost	R/W
SplyFan1On	45073	Supply fan 1 On/Off status	1 = Off 2 = On	R
SplyFan2On	46777	Supply fan 2 On/Off status	1 = Off 2 = On	R
RtrnFan1On	33641	Return fan 1 On/Off status	1 = Off 2 = On	R
RtrnFan2On	51337	Return fan 2 On/Off status	1 = Off	R

			2 = On	
UVlampOnOff	32789	UV lamp On/Off state	1 = Off 2 = On	R

Table 8. Multistate Value list

5.8 Positive Integer Value

Object Name	Object Instance	Object Description	Dimension	Read/Write
SplyFan1AlmWord1	8565	Supply fan 1 alarm word 1	Bit value, refer Table. A	R
SplyFan1AlmWord2	4374	Supply fan 1 alarm word 2	Bit value, refer Table. A	R
SplyFan2AlmWord1	61136	Supply fan 2 alarm word 1	Bit value, refer Table. A	R
SplyFan2AlmWord2	57011	Supply fan 2 alarm word 2	Bit value, refer Table. A	R
SplyFan3AlmWord1	49808	Supply fan 3 alarm word 1	Bit value, refer Table. A	R
SplyFan3AlmWord2	62195	Supply fan 3 alarm word 2	Bit value, refer Table. A	R
SplyFan4AlmWord1	25019	Supply fan 4 alarm word 1	Bit value, refer Table. A	R
SplyFan4AlmWord2	20952	Supply fan 4 alarm word 2	Bit value, refer Table. A	R
SplyFan5AlmWord1	9432	Supply fan 5 alarm word 1	Bit value, refer Table. A	R
SplyFan5AlmWord2	5307	Supply fan 5 alarm word 2	Bit value, refer Table. A	R
SplyFan6AlmWord1	60285	Supply fan 6 alarm word 1	Bit value, refer Table. A	R
SplyFan6AmWord2	56094	Supply fan 6 alarm word 2	Bit value, refer Table. A	R
SplyFan7AlmWord1	44574	Supply fan 7 alarm word 1	Bit value, refer Table. A	R
SplyFan7AlmWord2	40573	Supply fan 7 alarm word 2	Bit value, refer Table. A	R
SplyFan8AlmWord1	28492	Supply fan 8 alarm word 1	Bit value, refer Table. A	R
SplyFan8AlmWord2	24367	Supply fan 8 alarm word 2	Bit value, refer Table. A	R
RtrnFan1AlmWord1	25606	Return fan 1 alarm word 1	Bit value, refer Table. A	R
RtrnFan1AlmWord2	21605	Return fan 1 alarm word 2	Bit value, refer Table. A	R
RtrnFan2AlmWord1	43939	Return fan 2 alarm word 1	Bit value, refer Table. A	R
RtrnFan2AlmWord2	39872	Return fan 2 alarm word 2	Bit value, refer Table. A	R
RtrnFan3AlmWord1	43505	Return fan 3 alarm word 1	Bit value, refer Table. A	R
RtrnFan3AlmWord2	39314	Return fan 3 alarm word 2	Bit value, refer Table. A	R
RtrnFan4AlmWord1	9416	Return fan 4 alarm word 1	Bit value, refer Table. A	R
RtrnFan4AlmWord2	5291	Return fan 4 alarm word 2	Bit value, refer Table. A	R
RtrnFan5AlmWord1	25003	Return fan 5 alarm word 1	Bit value, refer Table. A	R
RtrnFan5AlmWord2	20936	Return fan 5 alarm word 2	Bit value, refer Table. A	R
RtrnFan6AlmWord1	44558	Return fan 6 alarm word 1	Bit value, refer	R

			Table. A	
RtrnFan6AmWord2	40557	Return fan 6 alarm word 2	Bit value, refer Table. A	R
RtrnFan7AlmWord1	60269	Return fan 7 alarm word 1	Bit value, refer Table. A	R
RtrnFan7AlmWord2	56094	Return fan 7 alarm word 2	Bit value, refer Table. A	R
RtrnFan8AlmWord1	10815	Return fan 8 alarm word 1	Bit value, refer Table. A	R
RtrnFan8AlmWord2	6748	Return fan 8 alarm word 2	Bit value, refer Table. A	R
MBRoomProbeAlm	43306	Room probe alarm word	Bit value, refer Table. C	R
MBRoomProbe2Alm	12119	Room probe 2 alarm word	Bit value, refer Table. C	R
MBRoomProbe3Alm	11298	Room probe 3 alarm word	Bit value, refer Table. C	R
MBRoomProbe4Alm	9321	Room probe 4 alarm word	Bit value, refer Table. C	R
HtgValveAlmWord	25133	Heating valve alarm word	Bit value, refer Table. B	R
ClgValveAlmWord	54881	Cooling valve alarm word	Bit value, refer Table. B	R
Clg2ValveAlmWord	26451	Cooling 2 valve alarm word	Bit value, refer Table. B	R
ClgHtgValveAlmWord	2759	Cooling/heating valve alarm word	Bit value, refer Table. B	R
PreHValveAlmWord	27145	Pre heating valve alarm word	Bit value, refer Table. B	R
PostHValveAlmWord	48057	Post heating valve alarm word	Bit value, refer Table. B	R

Modbus Fan Alarm	
Registers	**Alarm**
Modbus fans alarm word 1.	All bit values below represent status indicators (0 = OK, 1 = Alarm): Bit0: Motor blocked / Fan locked Bit1: Phase loss /Line fault Bit2: DC link over voltage Bit3: DC link under voltage Bit4: Overheat / Over temperature Bit5: Over current Bit6: Hall sensor / Hall signal Bit7: Wrong direction Bit8: Speed limit exceeded Bit9: Bad fan Bit10: AC over voltage Bit11: AC under voltage Bit12: Line voltage high Bit13: Earth to ground fault Bit14: IGBT fault Bit15: Communication error
Modbus fans alarm word 2.	All bit values below represent status indicators (0 = OK, 1 = Alarm): Bit0: EPROM fails Bit1: Bit2: Bit3: Bit4: Bit5: Bit6: Bit7: Bit8: Bit9: Bit10: Bit11: Bit12: Bit13: Bit14: Bit15:

Table.A

Modbus Valve Alarm	
Registers	**Alarm**
Modbus valves alarm word.	All bit values below represent status indicators (0 = OK, 1 = Alarm): Bit0: No Modbus communication Bit1: Gear disengaged Bit2: Actuator cannot move Bit3: Reverse flow Bit4: Flow setpoint not reached Bit5: Flow with closed valve Bit6: Flow actual exceeds flow nominal Bit7: Flow measurement error Bit8: **Internal activity** Bit9: Flow body temperature error Bit10: Communication to sensor interrupted Bit11: Freeze warning Bit12: Glycol detected Bit13: **Mechanical travel increased** Bit14: Bit15: Bus watchdog triggered

Table.B

Modbus Room Probe Alarm	
Registers	**Alarm**
Modbus room probe alarm word.	All bit values below represent status indicators (0 = OK, 1 = Fault): Bit0: Device status Bit1: Temperature sensor status Bit2: Humidity sensor status Bit3: CO_2 sensor status Bit4: Bit5: Bit6: Bit7: Bit8: Bit9: Bit10: Bit11: Bit12: Bit13: Bit14: Input temperature sensor (optional temperature) status Bit15: Communication error

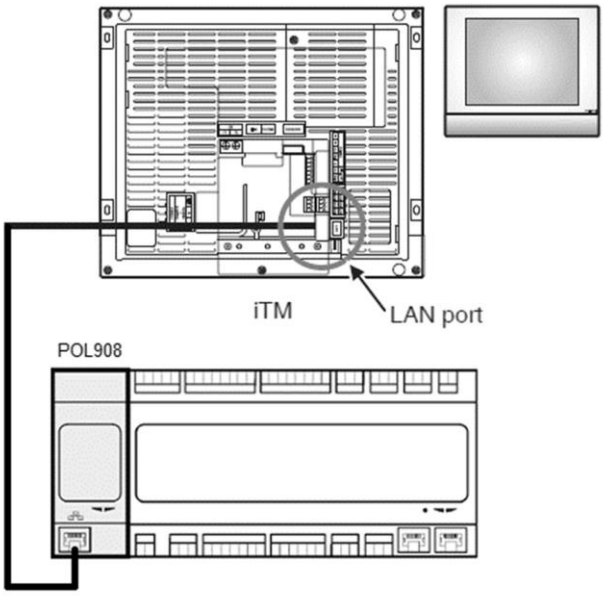
Table.C

6. Annex 1 – iTM Installation & Configuration

Important: The following procedure is valid only for iTM software version 1.21 and later. If you have a previous version installed, please update if first, by following the procedure included in the iTM manual.

The D-AHU in natively compatible with the Daikin intelligent Touch Manager (iTM), which acts as a mini building management system and enables the control of various AHU setpoints through its touchscreen interface. Refer to iTM specific operating manual for additional details on the device functionality.

If the AHU is provided with a BACnet-IP communication module (POL908), it can be connected to the iTM trough an Ethernet cable and remotely controlled. The following figure shows how to connect the iTM with the BACnet-IP communication module.



The following procedure allows the user to configure the iTM communication with the AHU controller and must be followed in order to properly set up both devices.

First configure the BACnet communication module (POL908) installed on the AHU controller. Go to the communication module configuration page located in:

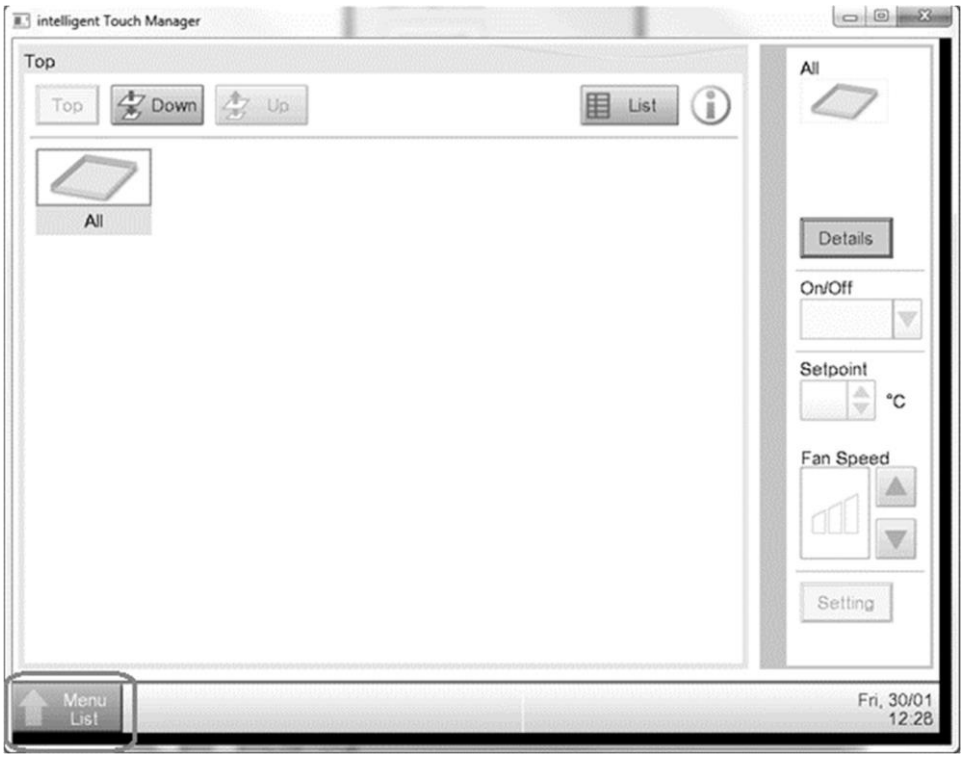
HMI Path: Main Menu -> Commissioning -> Communications -> Comm modules -> #-BACnet-IP

Now configure the module as follow:

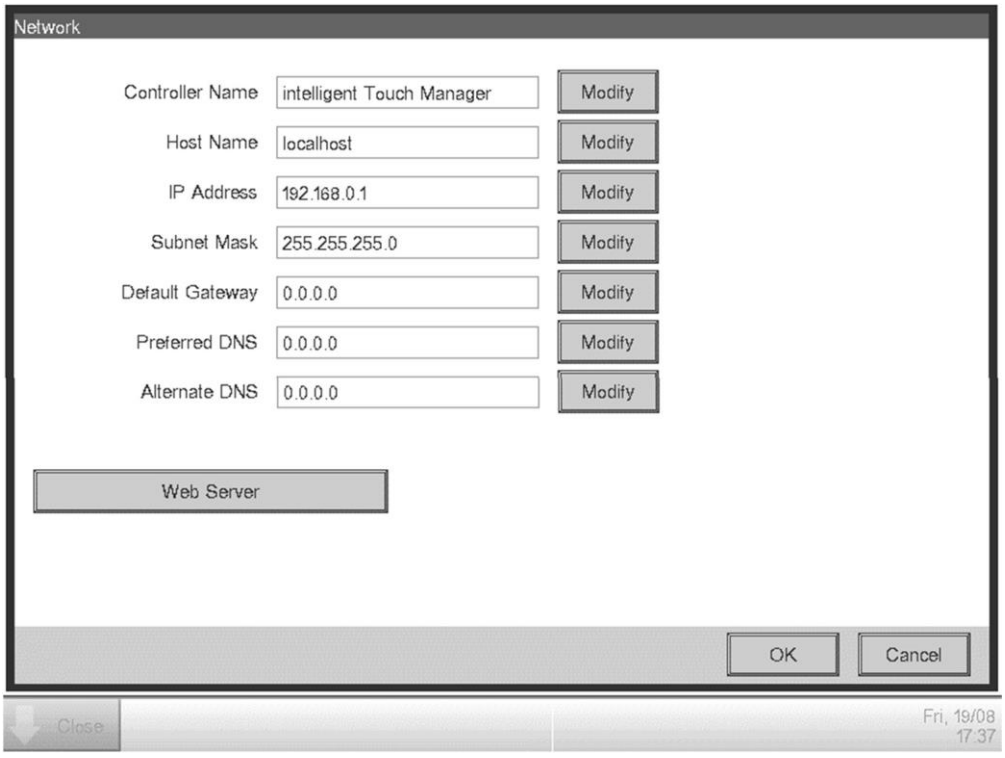
- **Device ID = xx** (xx must be a unique number for every AHU controller on the same network)
- DHCP = Passive
- **Given IP = 192.168.0.xxx** (xxx is a number between 0 & 255 and must be different from any other address in the same network)
- Given Mask = 255.255.255.0
- Write setting = Active

Restart the module using "**Restart required!**" item located at the end of the page. After the reboot, check if the configuration parameters above have been saved. At this point it is necessary to configure the iTM. Check network configuration settings on the iTM by following these steps.

Touch the "**Network**" button on the "**System Settings**" tab of the "**Menu List**" screen to display the Network screen.



As default, the following configuration should appear:

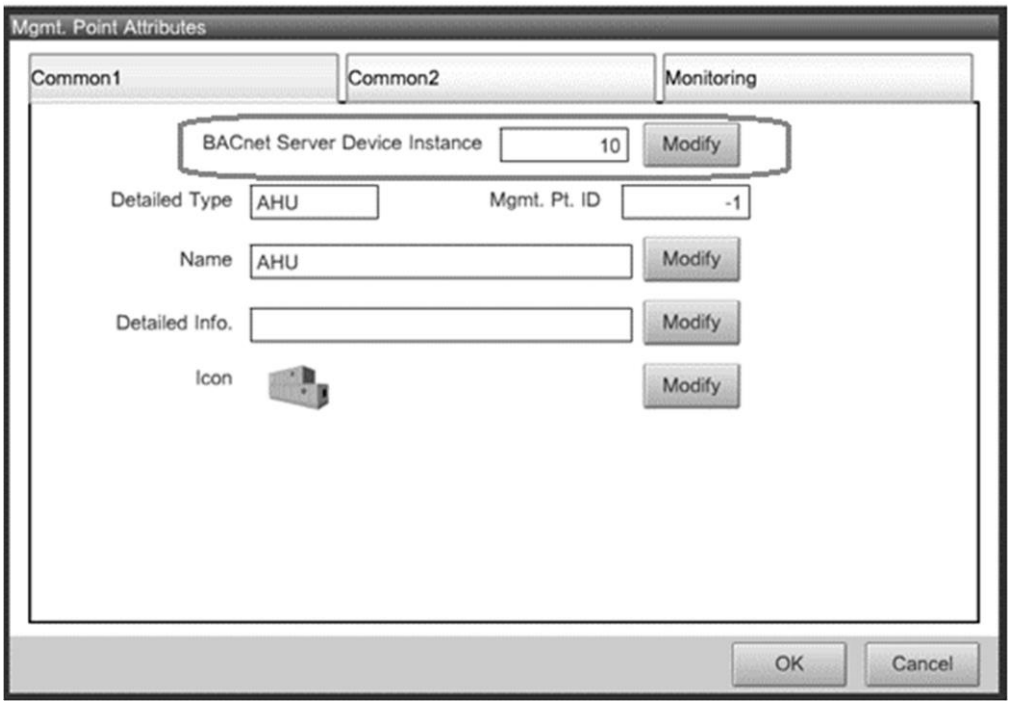


The IP address must be set to "**192.168.0.yyy**", where **yyy** is a number between 0 & 255 and must be different from any other address in the same network.

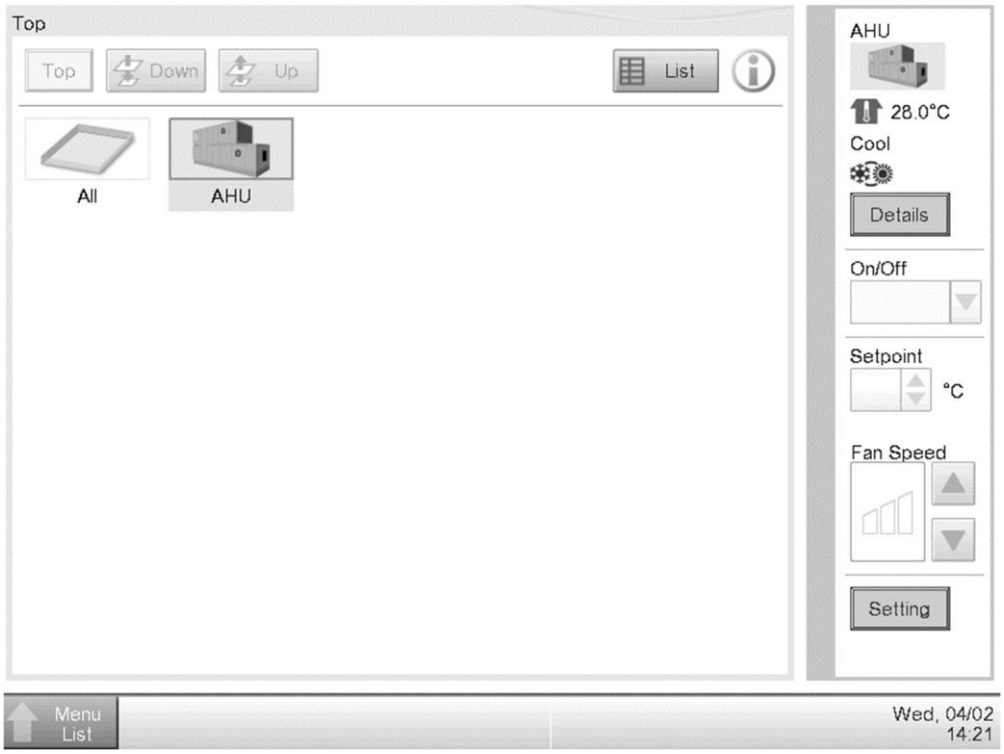
In order to be able to configure BACnet objects on the iTM, the user must log into the Service Mode (SE) from the "**Menu List**" screen (refer to ***iTM commissioning manual***). Once in SE mode, go to "**Mgmt. Pnt DataRegist**" under "**Service Settings**" tab.

Add an AHU device by selecting “Add -> Others -> AHU”.

Modify the “**BACnet Server Device Instance**” number so that it matches the “**Device ID**” number configured on the BACnet communication module (POL908) of the controller.



If necessary, restart the iTM. Now you can control the AHU in the iTM main screen.


Top
Top
Down
Up
List
All
AHU
AHU
28.0°C
Cool
Details
On/Off
Setpoint
°C
Fan Speed
Setting
Menu
List
Wed, 04/02
14:21

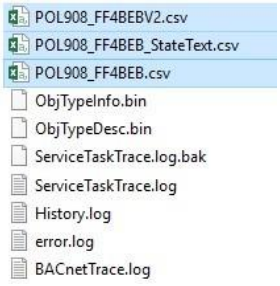
7. Annex 2 – EDE files for BACnet

Premise

The EDE files are created by the BACnet server each time the server is started. Download and import new files if s any change in controller configuration is done. Some BACnet objects could be no more available or new objects could be added. Also change in BACnet settings affect the new EDE file.

EDE file from BACnet IP module (POL908.00)

EDE files from POL908 module can be exported via ftp as it follows:

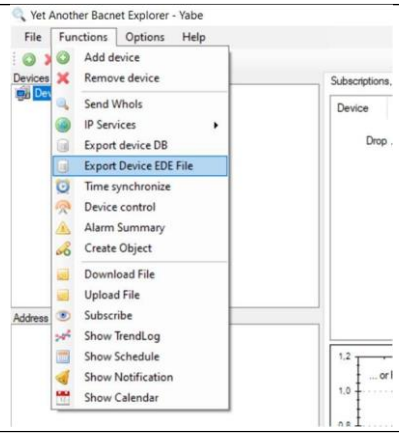
Step	Action
1	Connect POL908 module to the controller via plug connection.
2	Connect to the POL908 TCP/IP port the bus cable from: • a LAN if DHCP of the module is set to ON • a PC with static IP address if DHCP of the module is set to OFF
3	Set proper IP address and Subnet mask of the module and apply changes. i.e. IP 192.168.1.45 Subnet mask 255.255.255.0
4	Open a resource explorer instance and type the module IP address. i.e. ftp://192.168.1.45/Temp. In the folder “Temp” the EDE files in .csv format are available: 

EDE file from both modules:

BACnet MS/TP (POL904.00)

BACnet IP (POL908.00)

Step	Action
1	Connect POL904/908 module to the controller via plug connection.
2	Connect PC to POL904 by mean of a RS485-USB converter or to POL908 by mean of ethernet cable.
3	A BACnet explorer tool is needed in order to access the module and export the EDE files from it. Freeware tools are available on the internet, i.e. YABE
4	From YABE the EDE export option is available in functions menu.


Yet Another Bacnet Explorer - Yabe
File
Functions
Options
Help
Devices
Add device
Remove device
Send Whols
IP Services
Export device DB
Export Device EDE File
Time synchronize
Device control
Alarm Summary
Create Object
Download File
Upload File
Subscribe
Show TrendLog
Show Schedule
Show Notification
Show Calendar
Subscriptions,
Device
Drop
Address

8. Annex 3 - Microtech III PICS for BACnet

8.1 BACnet standardized device profile

☐	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)

8.2 BACnet interoperability building blocks supported

Data sharing	Data Sharing – ReadProperty-A	DS-RP-A
	Data Sharing – ReadProperty-B	DS-RP-B
	Data Sharing – ReadPropertyMultiple-A	DS-RPM-A
	Data Sharing – ReadPropertyMultiple-B	DS-RPM-B
	Data Sharing – WriteProperty-A	DS-WP-A
	Data Sharing – WriteProperty-B	DS-WP-B
	Data Sharing – WritePropertyMultiple-B	DS-WPM-B
	Data Sharing – COV-B	DS-COV-B
	Data Sharing – COV-A	DS-COV-A
Alarm and event management	Alarm and Event – Notification Internal-B	AE-N-I-B
	Alarm and Event – AcknowledgeAlarm-B	AE-ACK- B
	Alarm and Event – Information-B	AE-INFO-B
	Alarm and Event – Alarm Summary-B	AE-ASUM-B
	Alarm and Event – Event-Enrollment Summary-B	AE-ESUM-B
Scheduling	Scheduling – Internal-B	SCHED-I-B
	Scheduling – External-B	SCHED-E-B
Trending	Trending-Viewing and Modifying Trends Internal-B	T-VMT-I-B
	Trending-Automated Trend Retrieval-B	T-ATR-B
Device management	Device Management – Dynamic Device Binding-A	DM-DDB-A
	Device Management – Dynamic Device Binding-B	DM-DDB-B
	Device Management – Dynamic Object Binding-B	DM-DOB-B
	Device Management – DeviceCommunicationControl-B	DM-DCC-B
	Device Management – TimeSynchronization-B	DM-TS-B
	Device Management – UTCTimeSynchronization-B	DM-UTC-B
	Device Management – ReinitializeDevice-B	DM-RD-B
	Device Management – List Manipulation-B	DM-LM-B
	Device Management – Object Creation and Deletion-B	DM-OCD-B
	Device Management – Backup and Restore-B	DM-BR-B
Network management	Network Management-Connection Establishment-A	NM-CE-A

8.3 BACnet standard object types supported

Object type	Supported	Can be created dynamically	Can be deleted dynamically
Analog Input	☒	☐	☐
Analog Output	☒	☐	☐
Analog Value	☒	☐	☐
Binary Input	☒	☐	☐
Binary Output	☒	☐	☐
Binary Value	☒	☐	☐
Calendar	☒	☐	☐
Command	☐	☐	☐
Device	☒	☐	☐
Event Enrollment	☒	☒	☒
File	☒	☐	☐
Group	☐	☐	☐
Loop	☐	☐	☐
Multi-State Input	☒	☐	☐
Multi-State Output	☒	☐	☐
Multi-State Value	☒	☐	☐
Notification Class	☒	☐	☐
Program	☐	☐	☐
Schedule	☒	☐	☐
Averaging	☐	☐	☐
Trend Log	☒	☐	☐
Life-Safety-Point	☐	☐	☐
Life-Safety-Zone	☐	☐	☐
Accumulator	☐	☐	☐
Pulse-Converter	☐	☐	☐

8.4 BACnet standard object types description

Analog Input

Property supported	Writable	Range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Present_Value	X	
Description		
Status_Flags		
Event_State		
Reliability		
Out_Of_Service	X	
Units		
Max_Pres_Value		
Min_Pres_Value		
Priority_Array		
Relinquish_Default	X	
COV_Increment	X	0 .. maxReal
Time_Delay		
Notification_Class		

Low_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value AndHigh_Limit > Low_Limit
Deadband	X	0 .. maxReal
Limit_Enable	X	
Event_Enable	X	
Acked_Transitions		
Notify_Type		
Event_Time_Stamps		

Analog Output

Property supported	**Writable**	**Range restrictions**
Object_Identifier		
Object_Name		
Object_Type		
Present_Value	X	
Description		
Status_Flags		
Event_State		
Reliability		
Out_Of_Service	X	
Units		
Max_Pres_Value		
Min_Pres_Value		
Priority_Array		
Relinquish_Default	X	
COV_Increment	X	0 .. maxReal
Time_Delay		
Notification_Class		
High_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value AndHigh_Limit > Low_Limit
Low_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value AndHigh_Limit > Low_Limit
Deadband	X	0 .. maxReal
Limit_Enable	X	
Event_Enable	X	
Acked_Transitions		
Notify_Type		
Event_Time_Stamps		

Analog Value

Property supported	**Writable**	**Range restrictions**
Object_Identifier		
Object_Name		
Object_Type		
Present_Value	X	Depends on the Unit
Description		

Status_Flags		
Event_State		
Reliability		
Out_Of_Service	X	
Units		
Max_Pres_Value		
Min_Pres_Value		
Priority_Array		
Relinquish_Default	X	
COV_Increment	X	0 .. maxReal
Time_Delay		
Notification_Class		
High_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value AndHigh_Limit > Low_Limit
Low_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value AndHigh_Limit > Low_Limit
Deadband	X	0 .. maxReal
Limit_Enable	X	
Event_Enable	X	
Acked_Transitions		
Notify_Type		
Event_Time_Stamps		

Analog Value (setpoints)

Property supported	**Writable**	**Range restrictions**
Object_Identifier		
Object_Name		
Object_Type		
Present_Value	X(1)	Depends on the Unit
Units		
Status_Flags		
COV_Increment	X	0 .. maxReal
Out_Of_Service	X(1)	
Event_State		

(1) Writeable if Out_Of_Service=True

Binary Input

Property supported	**Writable**	**Range restrictions**
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	X(1)	
Status_Flags		
Out_Of_Service	X	
Event_State		

Inactive_Text		
Active_Text		
Polarity	X	
Notification_Class		
Reliability		
Acked_Transitions		
Event_Enable	X	
Alarm_Value	X	
Notify_Type		
Time_Delay		
Event_Time_Stamps		
Elapsed-active-time	X	Only 0
Time-of-active-time-reset		

(1) Writeable if Out_Of_Service=True

Binary Output

Property supported	**Writable**	**Range restrictions**
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	X	
Status_Flags		
Out_Of_Service	X	
Event_State		
Inactive_Text		
Active_Text		
Notification_Class		
Reliability		
Acked_Transitions		
Event_Enable	X	
Notify_Type		
Time_Delay		
Event_Time_Stamps		
Polarity	X	
Feedback_Value		
Priority_Array		
Relinquish_Default	X	
Elapsed-active-time	X	Only 0
Time-of-active-time-reset		

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