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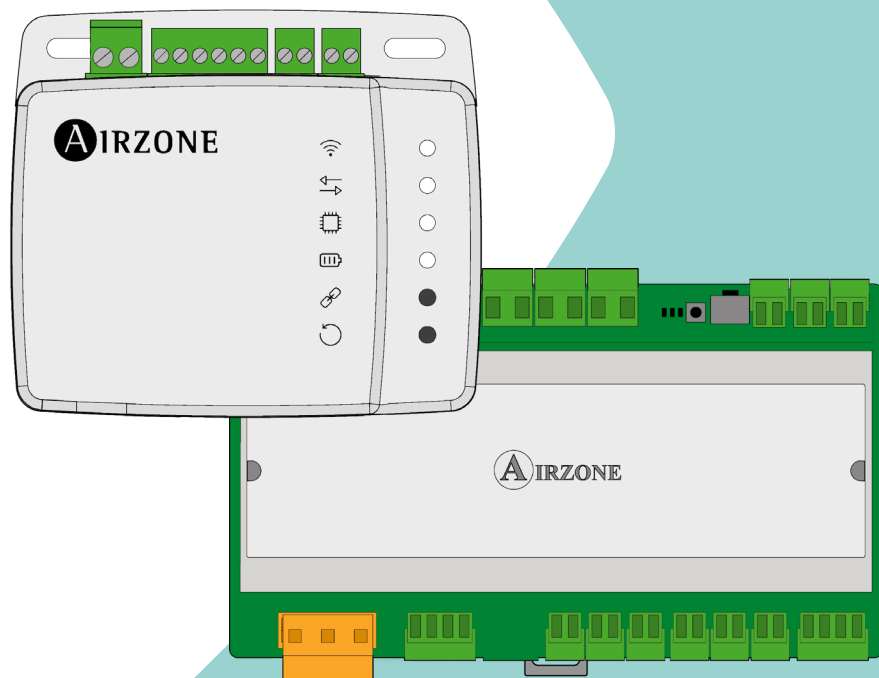
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Integration Manual

Aidoo Pro - BACnet



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Environmental Policy



- Never dispose of this equipment with household waste. Electrical and electronic products contain substances that can be harmful to the environment if not properly handled. The crossed-out waste bin symbol indicates separate collection of electrical devices, which must be separated from other urban waste. For correct environmental management, at the end of its useful life the equipment should be taken to the collection centers provided for this purpose.
- The parts that make it up can be recycled. Therefore, please respect the regulations in force regarding environmental protection.
- If you replace the equipment, the original equipment must be returned to your dealer or deposited at a specialized collection center.
- Violations are subject to the penalties and measures stipulated in environmental protection law.

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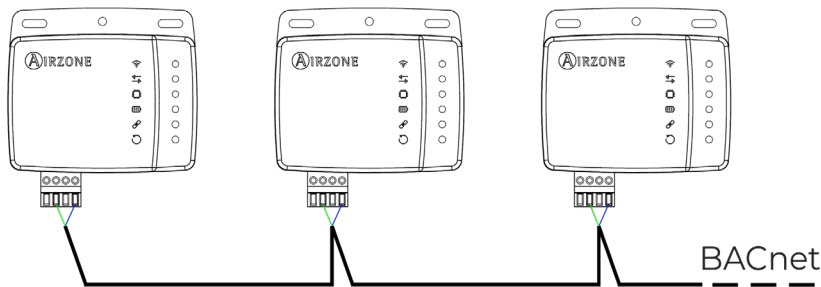
BACnet protocol

RS-485 COMMUNICATIONS PORT

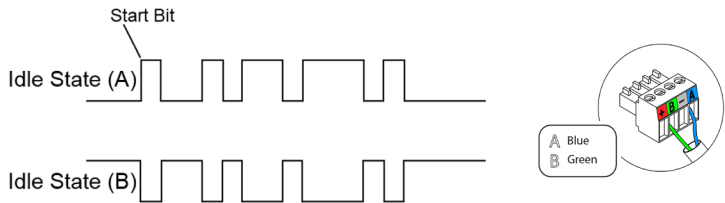
RS-485, or also known as EIA-485, is a bus communications standard.

Integration bus	
Communications port speed	300 to 115 200 bps
Communication	Half duplex
Frame length	8 bits
Stop bit	1 bit
Flow control	None
Parity	Par

Connection



For correct operation of Airzone systems, check that only the communication cables (green-blue) are connected to each terminal on the respective buses. Fix the cables following the color code.



PROTOCOL

Aidoo Pro allows a Building Management System (BMS) to control all variables of the Airzone systems. The device uses an open standard protocol based on ASHRAE 135, and is compatible with:

- BACnet (ANSI/ASHRAE-135)
- BACnet MS/TP

Aidoo Pro is a Plug&Play device for Airzone systems, and allows the following variables to be controlled and monitored:

- Switching on/off
- Room temperature
- Set-point temperature.
- Status of the operation mode.
- Fan status and speed.

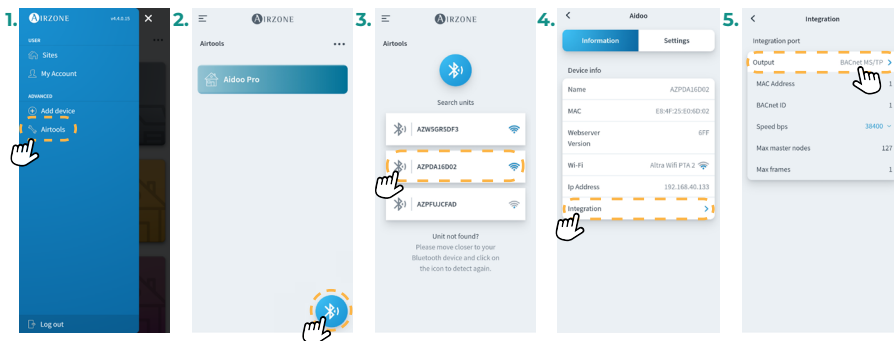
Aidoo Pro Wi-Fi

Aidoo is a BACnet slave device; it is therefore necessary to indicate its address. To do this, associate your Aidoo via the Airzone Cloud app (available for iOS and Android) by following these steps:

1. From the main screen, access the menu and select Airtools.
2. Start advanced configuration via Bluetooth.
3. Select your Aidoo Pro from the list.

Note: If your unit is not listed, confirm that the Bluetooth function on your iOS or Android device is enabled and that Aidoo is turned on and working properly.

4. Select "Integration".
5. Configure the output as BACnet MS/TP and set the slave address.



Download the Airzone Cloud app

OBJECTS

Compatible object type

Compatible Aidoo Pro control and monitoring objects are mapped to the standard object types defined by BACnet.

Object type		Compatible	Airzone management point
Accumulator	23		
Analog-Input	0	√	Room temperature
Analog-Output	1		
Analog-Value	2	√	Set-point temperature
Averaging	18		
Binary-Input	3	√	Communication with IU
Binary-Output	4	√	Auxiliary heat
Binary-Value	5	√	Switching on and off
Calendar	6		
Command	7		
Device	8		
Event-Enrollment	9		
File	10		
Group	11		
Life-Safety-Point	21		
Life-Safety-Zone	22		
Loop	12		
Multistate-Input	13		
Multistate-Output	14	√	Operation mode (configuration)
Multistate-Value	19	√	Fancoil speed (configuration)
Notification-Class	15		
Program	16		
Schedule	17		
Trend-Log	20		

List of objects

The complete list of objects available in Aidoo Pro is shown below. The availability of the communication objects depends on the configuration of the device and the type of installation.

The availability of the Aidoo Pro communication object is indicated in the "out of service" parameter of each communication object whether it is available or unavailable within the system.

The communication object will only have "correct/valid" values when "out of service" is FALSE.

Object type	Registration	Read (R) / Write (W)	Description	Values
Binary-value	0	R/W	Switching the zone	0 → Off, 1 → On
Binary-input	0	R	IU communication	0 → No communication, 1 → IU ready
Binary-input	1	R	IU errors	0 → No error, 1 → IU with error
Binary-input	2	R	Digital input	0 → Inactive, 1 → Active
Binary-output	0	R	Auxiliary heat	0 → Inactive, 1 → Active
Analog-value	0	R/W	Set-point	Set-point
Analog-value	1	R	Localtemp	Room temperature
Multi-state-value	0	R/W	Modes	1 → Auto, 2 → Cooling, 3 → Heating, 4 → Ventilation, 5 → Dry
	1	R/W	Speed	0 → Automatic, 1 → Speed 1, 2 → Speed 2, 3 → Speed 3
	2	R/W	Slats	X → Position X [1-9] 10 - Swing
Character-string-value	1	R	Errors	IU error codes

DETAILED DESCRIPTION OF OBJECTS

Common to all objects

When the indoor unit is communicating normally, communication can be established between the Aidoo Pro and the indoor unit. The BACnet Building Management System (BMS) will have access to the Airzone AC unit objects.

If communication between Aidoo Pro and the system is not successful, or if the request for information related to the communication object is not found within the Airzone system, the object property "out of service" is activated.

Switching On/Off

Aidoo Pro will communicate the status of each specific zone. Through the BACnet platform, any zone can be configured as on/off. These are read/write objects.

IU communication

If the indoor unit loses communication, Aidoo Pro will communicate this to BACnet. This object is read only.

IU errors

If the indoor unit generates an error, Aidoo Pro will communicate this to the BACnet platform. This object is read only.

Digital input

Aidoo Pro will communicate the status of the digital input. This object is read only.

Auxiliary heat

Aidoo Pro will communicate the status of Auxiliary heat. This object is read only.

Set-point temperature

The indoor unit setpoint temperature and its value are communicated to the BACnet system and can be modified by the BACnet system. This parameter is read and write.

Room temperature (Localtemp)

The BACnet platform can obtain the room temperature of any zone. This object is read only.

Operation mode

Aidoo Pro will communicate the operation mode of the system or of each zone (depending on the connected system), represented by a number. These are read/write objects. The modes are as follows:

- 0 → Stop
- 2 → Cooling
- 3 → Heating
- 4 → Dry
- 6 → Ventilation

Speed

This parameter refers to the AC unit's fan speed. Aidoo Pro will communicate the speed of the system or of each zone (depending on the connected system), represented by a number. These are read/write objects.

Slats

Aidoo Pro will communicate the position of the slats represented by a number. These are read/write objects. The position goes from 1 to 9; 10 is Swing mode.

Errors

If the indoor unit generates an error, Aidoo Pro will communicate this to the BACnet platform. This object is read only.

BACNET PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT

Date: Feb. 15,2021

Vendor Name: ALTRA S.L.

Product Name: Aidoo Pro

Product Model Number: AZAI6WSP_{xxx}

Applications Software Version: 6.XX Firmware Revision: 0.8.2 BACnet Protocol Revision: 12

Product Description:

This product provides the function of monitoring and control HVAC units

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) Aidoo Pro
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WritePropertyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTC Time Synchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Writable Properties : Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

(3) Analog Value

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : 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

Writable Properties : Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

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(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

- ☐ BACnet IP, (Annex J)
☐ BACnet IP, (Annex J), Foreign Device
☐ ISO 8802-3, Ethernet (Clause 7)
☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____
☒ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200
☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-
☐ Point, EIA 232 (Clause 10), baud rate(s) : _____
☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
☐ LonTalk, (Clause 11), medium : _____
☐ Other : _____

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

Networking Options:

- ☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.
☐ Annex H, BACnet Tunneling Router over IP
☐ BACnet / IP Broadcast Management Device (BBMD)
 Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :

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

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

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

Airzone Cloud (IP)

Modbus slave

GYW control for HVAC 3rd party thermostat

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Política medioambiental



- No tire nunca este equipo con los desechos domésticos. Los productos eléctricos y electrónicos contienen sustancias que pueden ser dañinas para el medioambiente si no se les da el tratamiento adecuado. El símbolo del contenedor de basura tachado indica la recogida selectiva de aparatos eléctricos, que se diferencia del resto de basuras urbanas. Para una correcta gestión ambiental, se deberá llevar el equipo a los centros de recogida previstos al final de su vida útil.
- Las piezas que forman parte del mismo se pueden reciclar. Respete, por tanto, la reglamentación en vigor sobre protección medioambiental.
- Debe entregarlo a su distribuidor si lo reemplaza por otro, o depositarlo en un centro de recogida especializado.
- Los infractores están sujetos a las sanciones y a las medidas que establece la ley sobre protección del medio ambiente.

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Protocolo BACnet

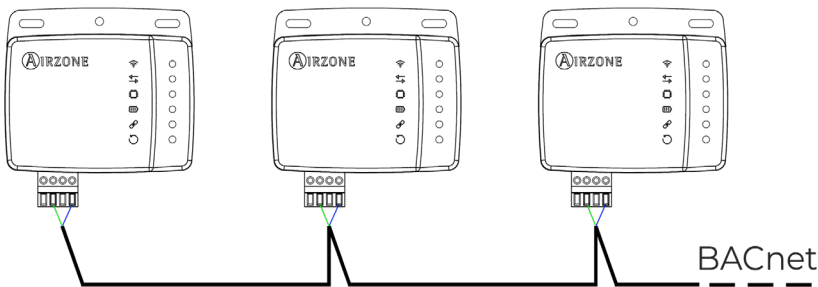
PUERTO DE COMUNICACIONES RS-485

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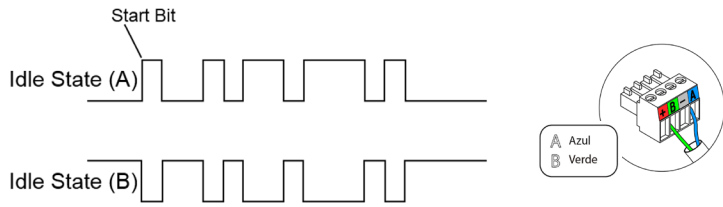
El RS-485, o también conocido como EIA-485, es un estándar de comunicaciones en bus.

Bus de integración	
Velocidad del puerto de comunicación	De 300 a 115200 bps
Comunicación	Half duplex
Longitud de la trama	8-bit
Bit de parada	1-bit
Control de flujo	Ninguno
Paridad	Par

Conexión



Para el correcto funcionamiento de los sistemas Airzone, verifique que sólo están conectados los cables de comunicación (verde-azul) en cada terminal en los respectivos buses. Fije los cables respetando el código de colores.



PROTOCOLO

El Aidoo Pro permite a un Sistema de gestión de edificaciones (Building Management System - BMS) controlar todas las variables de los sistemas Airzone. El dispositivo utiliza un protocolo estándar abierto basado en ASHRAE Standard 135, y es compatible con:

- BACnet (ANSI/ASHRAE-135)
- BACnet MS/TP

ES

El Aidoo Pro es un dispositivo Plug&Play para sistemas Airzone, y permite controlar y monitorizar las siguientes variables:

- Encendido/apagado
- Temperatura ambiente.
- Temperatura de consigna.
- Estado del modo de funcionamiento.
- Estado y velocidad del ventilador.

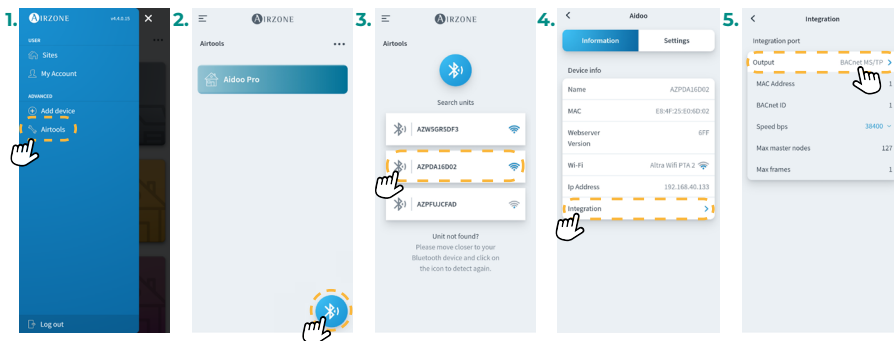
Aidoo Pro Wi-Fi

El Aidoo es un dispositivo BACnet esclavo, por ello es necesario indicar la dirección de este. Para ello, asocie su Aidoo mediante la app "Airzone Cloud" (disponible para iOS y Android) siguiendo estos pasos:

1. Desde la pantalla principal acceda al menú y seleccione Airtools.
2. Comience la configuración avanzada vía Bluetooth
3. Seleccione su Aidoo Pro del listado.

Nota: Si su unidad no aparece confirme que la función Bluetooth de su dispositivo iOS o Android está activado y que el Aidoo está encendido y funciona correctamente.

4. Seleccione "Integración".
5. Configure la salida como BACnet MS/TP y establezca la dirección de esclavo.



Descarga App Airzone Cloud

OBJETOS

Tipo de objeto soportado

Los objetos de control y monitorización del Aidoo Pro soportados son asignados a los objetos-tipo estándar definidos por el BACnet.

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Tipo de objeto		Soportado	Punto de gestión Airzone
Accumulator	23		
Analog-Input	0	√	Temperatura ambiente
Analog-Output	1		
Analog-Value	2	√	Temperatura de consigna
Averaging	18		
Binary-Input	3	√	Comunicación con IU
Binary-Output	4	√	Calor auxiliar
Binary-Value	5	√	Encendido y apagado
Calendar	6		
Command	7		
Device	8		
Event-Enrollment	9		
File	10		
Group	11		
Life-Safety-Point	21		
Life-Safety-Zone	22		
Loop	12		
Multistate-Input	13		
Multistate-Output	14	√	Modo de funcionamiento (configuración)
Multistate-Value	19	√	Velocidad del Fancoil (configuración)
Notification-Class	15		
Program	16		
Schedule	17		
Trend-Log	20		

Lista de objetos

A continuación, se muestra la lista completa de objetos disponibles en Aidoo Pro. La disponibilidad de los objetos de comunicación depende de la configuración del dispositivo y del tipo de instalación.

La disponibilidad del objeto de comunicación del Aidoo Pro está indicada en el parámetro "out of service" (fuera de servicio) de cada objeto de comunicación tanto si está disponible como si no dentro del sistema.

El objeto de comunicación solo tendrá valores correct/valid (correcto/válido) cuando el "out of service" es FALSE (FALSO).

Tipo de objeto	Registro	Lectura (R) / Escritura (W)	Descripción	Valores
Binary-value	0	R/W	Encendido / Apagado	0 → Apagado, 1 → Encendido
Binary-input	0	R	Comunicación IU	0 → Sin comunicación, 1 → IU lista
Binary-input	1	R	Errores IU	0 → Sin error, 1 → IU con error
Binary-input	2	R	Entrada digital	0 → Inactiva, 1 → Activa
Binary-output	0	R	Calor auxiliar	0 → Inactiva, 1 → Activa
Analog-value	0	R/W	Consigna	Consigna
Analog-value	1	R	Localtemp	Temperatura ambiente
Multi-state-value	0	R/W	Modos	1 →> Auto, 2 → Frío, 3 → Calor, 4 → Ventilación, 5 → Seco
	1	R/W	Velocidad	0 → Automática, 1 → Velocidad 1, 2 → Velocidad 2, 3 → Velocidad 3
	2	R/W	Lamas	X → Posición X [1-9] 10 - swing
Character-string- value	1	R	Errores	Código de error de IU

DESCRIPCIÓN DETALLADA DE LOS OBJETOS

Común a todos los objetos

Cuando la unidad interior se está comunicando de manera normal, se puede establecer una comunicación entre el Aidoo Pro y la unidad interior. El Sistema de gestión de edificaciones BACnet (BMS) tendrá acceso los objetos de la unidad Airzone.

Si la comunicación entre el Aidoo Pro y el sistema no es correcta, o si la petición de información relacionada al objeto de comunicación no se encuentra dentro del sistema Airzone, se activa la propiedad del objeto "Out of service" (fuera de servicio).

Encendido/Apagado

El Aidoo Pro reportará el estado de cada zona específica. A través de la plataforma BACnet, cualquier zona puede configurarse como encendida/apagada. Son objetos de lectura y escritura.

Comunicación IU

Si la unidad interior pierde la comunicación, Aidoo Pro lo comunicará a BACnet. Este objeto es de solo lectura.

Errores IU

Si la unidad interior genera algún error, Aidoo Pro lo reportará a la plataforma BACnet. Este objeto es de lectura.

Entrada digital

El Aidoo Pro reportará el estado de la entrada digital. Este objeto es de solo lectura.

Calor auxiliar

El Aidoo Pro reportará el estado del calor auxiliar. Este objeto es de solo lectura.

Temperatura de consigna

La temperatura de consigna de la unidad interior y su valor son reportados al sistema BACnet y pueden ser modificados por este. Este parámetro es de lectura y escritura.

Temperatura ambiente (Localtemp)

La plataforma BACnet puede obtener la temperatura ambiente de cualquier zona. Es un objeto de sólo lectura.

Modo de funcionamiento

El Aidoo Pro reportará el modo de funcionamiento del sistema o de cada zona (en función del sistema conectado), representado por un número. Son objetos de lectura y escritura. Estos modos son:

- 0 → Stop
- 2 → Frío
- 3 → Calor
- 4 → Seco
- 6 → Ventilación

Velocidad

Este parámetro está referido a la velocidad del ventilador de la unidad. El Aidoo Pro reportará la velocidad del sistema o de cada zona (en función del sistema conectado), representado por un número. Son objetos de lectura y escritura.

Lamas

El Aidoo Pro reportará la posición de las lamas representado por un número. Son objetos de lectura y escritura. La posición va del 1 al 9, el 10 es el modo Swing.

Errores

Si la unidad interior genera algún error, Aidoo Pro lo reportará a la plataforma BACnet. Este objeto es de lectura.

DECLARACIÓN DE CONFORMIDAD DE LA IMPLEMENTACIÓN DEL PROTOCOLO BACNET

Date: Feb. 15,2021

Vendor Name: ALTRA S.L.

Product Name: Aidoo Pro

Product Model Number: AZAI6WSP_{xxx}

Applications Software Version: 6.XX Firmware Revision: 0.8.2 BACnet Protocol Revision: 12

Product Description:

This product provides the function of monitoring and control HVAC units

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) Aidoo Pro
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WritePropertyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTC Time Synchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable: No

Dynamically Deletable: No

Optional Properties Supported: Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Writable Properties: Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties: n / a

Property Range Restrictions: n / a

(3) Analog Value

Dynamically Creatable: No

Dynamically Deletable: No

Optional Properties Supported: 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

Writable Properties: Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties: n / a

Property Range Restrictions: n / a

ES

(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

- ☐ BACnet IP, (Annex J)
☐ BACnet IP, (Annex J), Foreign Device
☐ ISO 8802-3, Ethernet (Clause 7)
☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____
☒ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200
☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-
☐ Point, EIA 232 (Clause 10), baud rate(s) : _____
☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
☐ LonTalk, (Clause 11), medium : _____
☐ Other : _____

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

Networking Options:

- ☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.
☐ Annex H, BACnet Tunneling Router over IP
☐ BACnet / IP Broadcast Management Device (BBMD)
 Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :

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

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

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

Airzone Cloud (IP)

Modbus slave

GYW control for HVAC 3rd party thermostat

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Politique environnementale



- Ne jetez pas l'appareil dans la poubelle des déchets ménagers. Les appareils électriques et électroniques contiennent des substances qui peuvent être nocives pour l'environnement si ceux-ci ne sont pas traités correctement. Le symbole de la poubelle barrée d'une croix indique une collecte sélective des appareils électriques, différente du reste de déchets urbains. Dans l'intérêt d'une bonne gestion environnementale, l'appareil devra être déposé dans les centres de collecte prévus à cet effet, à la fin de sa durée de vie utile.
- Les pièces qui le composent peuvent être recyclées. Veuillez, par conséquent, à respecter la réglementation en vigueur en matière de protection de l'environnement.
- Rendez-vous chez le distributeur, si vous souhaitez remplacer l'appareil par un autre, ou déposez-le dans un centre de collecte spécialisé.
- Les transgresseurs s'exposent aux sanctions et aux dispositions prévues par la loi en matière de protection sur l'environnement.

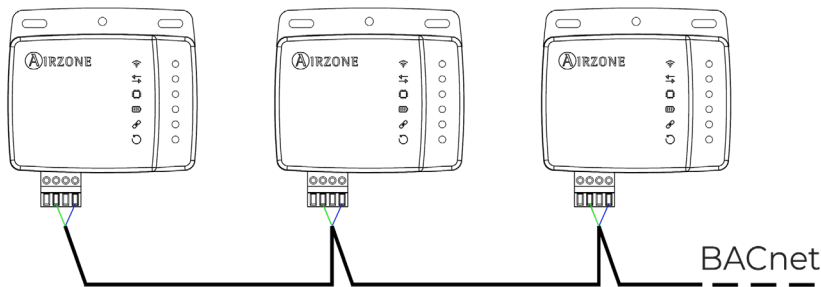
Protocole BACnet

PORT DE COMMUNICATION RS-485

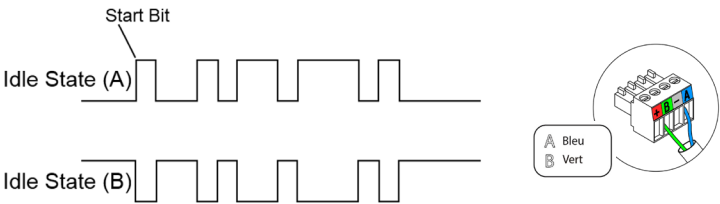
Le RS-485, également appelé EIA-485, est un standard de communication par bus.

Bus d'intégration	
Vitesse du port de communication	De 300 à 115 200 bps
Communication	Half duplex
Longueur de trame	8 bits
Bit d'arrêt	1 bit
Contrôle de flux	Aucun
Parité	Paire

Connexion



Pour le bon fonctionnement des systèmes Airzone, vérifiez que seuls les câbles de communication (vert-bleu) de chaque terminal sont connectés aux bus respectifs. Fixez les câbles en respectant le code couleur.



PROTOCOLE

L'Aidoo Pro permet à un système de gestion technique de bâtiment et gestion technique centralisée (GTB/GTC) de contrôler toutes les variables des systèmes Airzone. Le dispositif utilise un protocole standard ouvert basé sur la norme ASHRAE 135 et est compatible avec :

- BACnet (ANSI/ASHRAE-135)
- BACnet MS/TP

L'Aidoo Pro est un dispositif Plug&Play pour systèmes Airzone, qui permet de contrôler et surveiller les variables suivantes :

- Marche/arrêt.
- Température ambiante
- Température de consigne.
- État du mode de fonctionnement.
- État et vitesse du ventilateur.

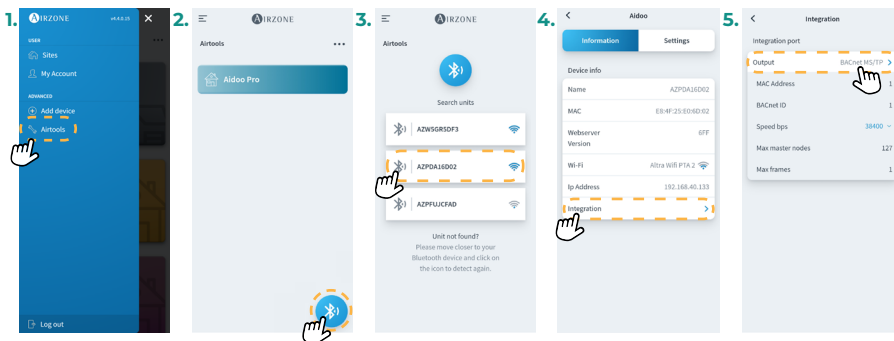
Aidoo Pro Wi-Fi

L'Aidoo est un dispositif BACnet esclave. Il est donc nécessaire d'indiquer son adresse. Pour cela, associez votre Aidoo grâce à l'application Airzone Cloud (disponible sur iOS et Android) en suivant les étapes suivantes :

1. Sur l'écran principal, accédez au menu et sélectionnez Airtools.
2. Commencez la configuration avancée via Bluetooth.
3. Sélectionnez votre Aidoo Pro dans la liste.

Note : si votre unité n'apparaît pas, vérifiez que la fonction Bluetooth de votre dispositif iOS ou Android est activée et que l'Aidoo est allumé et fonctionne correctement.

4. Sélectionnez « Intégration ».
5. Réglez la sortie sur BACnet MS/TP et définissez la direction de l'esclave.



Téléchargement de l'application Airzone Cloud

OBJETS

Type d'objet compatible

Les objets compatibles de contrôle et surveillance de l'Aidoo Pro sont assignés aux types d'objet standards définis par BACnet.

Type d'objet	Compatible	Poste de gestion Airzone
Accumulator 23		
Analog-Input 0	√	Température ambiante
Analog-Output 1		
Analog-Value 2	√	Température de consigne
Averaging 18		
Binary-Input 3	√	Communication avec l'unité intérieure
Binary-Output 4	√	Chauffage auxiliaire
Binary-Value 5	√	Marche et arrêt
Calendar 6		
Command 7		
Device 8		
Event-Enrollment 9		
File 10		
Group 11		
Life-Safety-Point 21		
Life-Safety-Zone 22		
Loop 12		
Multistate-Input 13		
Multistate-Output 14	√	Mode de fonctionnement (configuration)
Multistate-Value 19	√	Vitesse du ventilo-convecteur (configuration)
Notification-Class 15		
Program 16		
Schedule 17		
Trend-Log 20		

Liste d'objets

Vous retrouverez plus bas la liste complète des objets disponibles sur Aidoo Pro. La disponibilité des objets de communication dépend de la configuration du dispositif et du type d'installation.

La disponibilité de l'objet de communication de l'Aidoo Pro est indiquée dans le paramètre « out of service » (hors service) de chaque objet de communication, et ce, qu'il soit disponible ou pas dans le système.

L'objet de communication a les valeurs « correct/valid » (correcte/valable) uniquement quand le paramètre « out of service » est réglé sur FALSE (FAUX).

Type d'objet	Registre	Lecture (R) / Écriture (W)	Description	Valeurs
Binary-value	0	R/W	Marche/Arrêt	0 → Arrêt, 1 → Marche
Binary-input	0	R	Communication avec l'unité intérieure	0 → Sans communication, 1 → Unité intérieure prête
Binary-input	1	R	Erreurs de l'unité intérieure	0 → Sans erreur, 1 → Unité intérieure comportant une erreur
Binary-input	2	R	Entrée numérique	0 → Inactive, 1 → Active
Binary-output	0	R	Chauffage auxiliaire	0 → Inactif, 1 → Actif
Analog-value	0	R/W	Consigne	Consigne
Analog-value	1	R	Localtemp	Température ambiante
Multi-state-value	0	R/W	Modes	1 → > Auto, 2 → Refroidissement, 3 → Chauffage, 4 → Ventilation, 5 → Déshumidification
	1	R/W	Vitesse	0 → Automatique, 1 → Vitesse 1, 2 → Vitesse 2, 3 → Vitesse 3
	2	R/W	Lames	X → Position X [1-9] 10 - Balançoire
Character-string-value	1	R	Erreurs	Code d'erreur de l'unité intérieure

DESCRIPTION DÉTAILLÉE DES OBJETS

Commun à tous les objets

Quand l'unité intérieure communique normalement, il est possible d'établir une communication entre l'Aidoo Pro et l'unité intérieure. Le système de gestion technique de bâtiment et gestion technique centralisée (GTB/GTC) BACnet aura accès aux objets de l'unité Airzone.

Si la communication entre l'Aidoo Pro et le système n'est pas bonne ou si la demande d'information concernant l'objet de communication n'est pas dans le système Airzone, la propriété « Out of service » (hors service) de l'objet est activée.

Marche/Arrêt

L'Aidoo Pro communique l'état de chaque zone spécifique. La plateforme BACnet permet d'allumer ou d'éteindre n'importe quelle zone. Il s'agit d'objets de lecture et d'écriture.

Communication avec l'unité intérieure

Si l'unité intérieure perd la communication, l'Aidoo Pro l'indique à BACnet. Il s'agit d'un objet de lecture seule.

Erreurs de l'unité intérieure

Si l'unité intérieure génère une erreur, l'Aidoo Pro l'indique à la plateforme BACnet. Il s'agit d'un objet de lecture.

Entrée numérique

L'Aidoo Pro communique l'état de l'entrée numérique. Il s'agit d'un objet de lecture seule.

Chauffage auxiliaire

L'Aidoo Pro communique l'état du chauffage auxiliaire. Il s'agit d'un objet de lecture seule.

Température de consigne

La température de consigne de l'unité intérieure et sa valeur sont communiquées au système BACnet, qui peut les modifier. Ce paramètre est un objet de lecture et d'écriture.

Température ambiante (Localtemp)

La plateforme BACnet peut obtenir la température ambiante de n'importe quelle zone. Il s'agit d'un objet de lecture seule.

Mode de fonctionnement

L'Aidoo Pro signale avec un chiffre le mode de fonctionnement du système ou de chaque zone (en fonction du système connecté). Il s'agit d'objets de lecture et d'écriture. Ces modes sont les suivants :

- 0 → Stop
- 2 → Refroidissement
- 3 → Chauffage
- 4 → Déshumidification
- 6 → Ventilation

Vitesse

Ce paramètre fait référence à la vitesse du ventilateur de l'unité. L'Aidoo Pro signale avec un chiffre la vitesse du système ou de chaque zone (en fonction du système connecté). Il s'agit d'objets de lecture et d'écriture.

Lames

L'Aidoo Pro signale avec un chiffre la position des lames. Il s'agit d'objets de lecture et d'écriture. La position va du 1 au 9 ; le 10 correspondant au mode Balançoire.

Erreurs

Si l'unité intérieure génère une erreur, l'Aidoo Pro l'indique à la plateforme BACnet. Il s'agit d'un objet de lecture.

DÉCLARATION DE CONFORMITÉ DE LA MISE EN PLACE DU PROTOCOLE BACNET

Date: Feb. 15,2021

Vendor Name: ALTRA S.L.

Product Name: Aidoo Pro

Product Model Number: AZAI6WSP_{xxx}

Applications Software Version: 6.XX **Firmware Revision:** 0.8.2 **BACnet Protocol Revision:** 12

Product Description:

This product provides the function of monitoring and control HVAC units

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) Aidoo Pro
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WritePropertyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTCTimeSynchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Writable Properties : Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

(3) Analog Value

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : 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

Writable Properties : Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

FR

(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

- ☐ BACnet IP, (Annex J)
- ☐ BACnet IP, (Annex J), Foreign Device
- ☐ ISO 8802-3, Ethernet (Clause 7)
- ☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____
- ☒ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200
- ☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-
- ☐ Point, EIA 232 (Clause 10), baud rate(s) : _____
- ☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
- ☐ LonTalk, (Clause 11), medium : _____
- ☐ Other : _____

FR

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

Networking Options:

- ☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.
- ☐ Annex H, BACnet Tunneling Router over IP
- ☐ BACnet / IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :

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

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

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

Airzone Cloud (IP)

Modbus slave

GYW control for HVAC 3rd party thermostat

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IT

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Politica ambientale



- Non smaltire mai questa unità insieme agli altri rifiuti domestici. I prodotti elettrici ed elettronici contengono sostanze che possono essere dannose per l'ambiente in assenza di un adeguato trattamento. Il simbolo del cassonetto contrassegnato da una croce indica la raccolta separata delle apparecchiature elettriche, differente dal resto dei rifiuti urbani. Per una corretta gestione ambientale, l'unità dovrà essere smaltita presso gli appositi centri di raccolta alla fine del suo ciclo di vita.
- Le parti che fanno parte di questa unità possono essere riciclate. Si prega quindi di rispettare la regolamentazione in vigore sulla tutela dell'ambiente.
- È necessario consegnare l'articolo al relativo distributore in caso di sostituzione con un'altra unità nuova o depositarlo in un centro di raccolta specializzato.
- I trasgressori saranno soggetti alle sanzioni e alle misure stabilite dalle normative in materia di tutela dell'ambiente.

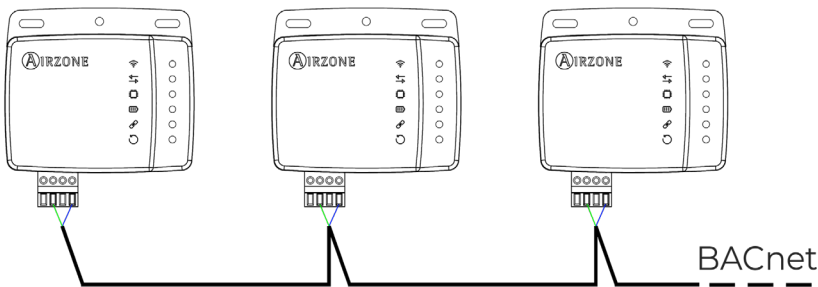
Protocollo BACnet

PORTA DI COMUNICAZIONE RS-485

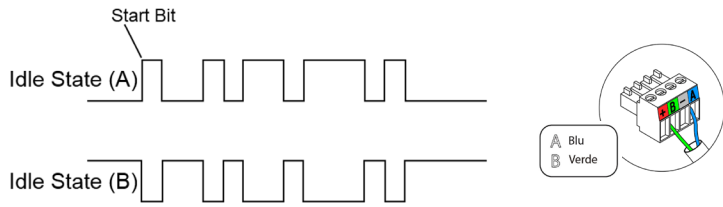
Lo standard RS-485, conosciuto anche come EIA-485, è uno standard di comunicazione bus.

Bus di integrazione	
Velocità della porta di comunicazione	Da 300 a 115.200 bps
Comunicazione	Half duplex
Lunghezza della trama	8 bit
Bit di fermata	1 bit
Controllo del flusso	Nessuno
Parità	Par

Collegamento



Per un corretto funzionamento dei sistemi Airzone, verificare che siano collegati solamente i cavi di comunicazione (verde-blu) ai terminali dei rispettivi bus. Fissare i cavi rispettando il codice dei colori.



PROTOCOLLO

L'Aidoo Pro consente a un sistema di gestione degli edifici (Building Management System [BMS]) di controllare tutte le variabili dei sistemi Airzone. Il dispositivo utilizza un protocollo standard aperto basato sulla norma ASHRAE 135, ed è compatibile con:

- BACnet (ANSI/ASHRAE-135)
- BACnet MS/TP

L'Aidoo Pro è un dispositivo Plug&Play per sistemi Airzone, e consente di controllare e monitorare le seguenti variabili:

- Acceso/spento
- Temperatura ambiente
- Temperatura impostata.
- Stato del modo di funzionamento.
- Stato e velocità del ventilatore.

IT

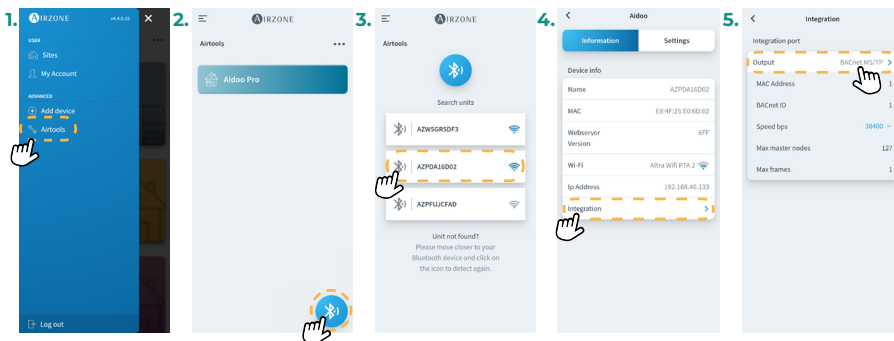
Aidoo Pro Wi-Fi

L'Aidoo è un dispositivo BACnet slave; perciò è necessario indicarne il relativo indirizzo. Per fare ciò, associare l'Aidoo mediante l'app Airzone Cloud (disponibile per iOS e Android) seguendo questi passaggi:

1. Dalla schermata principale, accedere al menu e selezionare Airtools.
2. Avviare la configurazione avanzata tramite Bluetooth.
3. Selezionare l'Aidoo Pro dalla lista.

Nota: Se l'unità da aggiungere non appare tra quelle disponibili, controllare che la funzione Bluetooth del dispositivo iOS o Android usato sia attiva e che l'Aidoo sia acceso e funzioni correttamente.

4. Selezionare "Integrazione".
5. Configurare l'uscita come BACnet MS/TP e impostare l'indirizzo slave.



Download dell'applicazione Airzone Cloud

OGGETTI

Tipo di oggetto compatibile

Gli oggetti di controllo e monitoraggio dell'Aidoo Pro compatibili vengono assegnati ai tipi di oggetto standard definiti dal BACnet.

Tipo di oggetto	Compatibile	Punto di gestione Airzone
Accumulator 23		
Analog-input 0	√	Temperatura ambiente
Analog-Output 1		
Analog-Value 2	√	Temperatura impostata
Averaging 18		
Binary-input 3	√	Comunicazione con l'unità interna
Binary-Output 4	√	Caldo ausiliare
Binary-Value 5	√	Accensione e spegnimento
Calendar 6		
Command 7		
Device 8		
Event-Enrollment 9		
File 10		
Group 11		
Life-Safety-Point 21		
Life-Safety-Zone 22		
Loop 12		
Multistate-Input 13		
Multistate-Output 14	√	Modo di funzionamento (configurazione)
Multistate-Value 19	√	Velocità del fancoil (configurazione)
Notification-Class 15		
Program 16		
Schedule 17		
Trend-Log 20		

Lista oggetti

Di seguito, viene riportata la lista completa degli oggetti disponibili in Aidoo Pro. La disponibilità degli oggetti di comunicazione dipende dalla configurazione del dispositivo e dal tipo di impianto.

La disponibilità dell'oggetto di comunicazione dell'Aidoo Pro è indicata nel parametro "out of service" (fuori servizio) di ogni oggetto di comunicazione, sia che sia disponibile o meno all'interno del sistema.

L'oggetto di comunicazione avrà valori "correct/valid" (corretto/valido) solo quando il parametro "out of service" è FALSE (FALSO).

Tipo di oggetto	Registro	Lettura (R) / Scrittura (W)	Descrizione	Valori
Binary-value	0	R/W	Acceso/Spento	0 → Spento, 1 → Acceso
Binary-input	0	R	Comunicazione con l'unità interna	0 → Nessuna comunicazione, 1 → Unità interna lista
Binary-input	1	R	Errori dell'unità interna	0 → Nessun errore, 1 → Unità interna con errore
Binary-input	2	R	Entrata digitale	0 → Inattiva, 1 → Attiva
Binary-output	0	R	Caldo ausiliare	0 → Inattivo, 1 → Attivo
Analog-value	0	R/W	Impostato	Impostato
Analog-value	1	R	Localtemp	Temperatura ambiente
Multi-state-value	0	R/W	Modi	1 → Auto, 2 → Freddo, 3 → Caldo, 4 → Ventilazione, 5 → Deumidificazione
	1	R/W	Velocità	0 → Automatica, 1 → Velocità 1, 2 → Velocità 2, 3 → Velocità 3
	2	R/W	Alette	X → Posizione X [1-9] 10 - Swing
Character-string-value	1	R	Errori	Codice di errore dell'unità interna

DESCRIZIONE DETTAGLIATA DEGLI OGGETTI

Comune a tutti gli oggetti

Quando l'unità interna comunica in modo normale, è possibile impostare una comunicazione tra l'Aidoo Pro e l'unità interna. Il sistema di gestione degli edifici (BMS) BACnet avrà accesso agli oggetti dell'unità Airzone.

Se la comunicazione tra l'Aidoo Pro e il sistema non è corretta, o se la richiesta di informazioni relativa all'oggetto di comunicazione non si trova all'interno del sistema Airzone, si attiva la proprietà dell'oggetto "out of service" (fuori servizio).

Acceso/Spento

L'Aidoo Pro comunicherà lo stato di ogni zona specifica. Mediante la piattaforma BACnet, qualsiasi zona può essere configurata come accesa/spenta. Sono oggetti di lettura e scrittura.

Comunicazione con l'unità interna

Se l'unità interna perde la comunicazione, l'Aidoo Pro lo comunicherà a BACnet. Questo oggetto è di sola lettura.

Errori dell'unità interna

Se l'unità interna genera un errore, l'Aidoo Pro lo comunicherà alla piattaforma BACnet. Questo oggetto è di lettura.

Entrata digitale

L'Aidoo Pro comunicherà lo stato dell'entrata digitale. Questo oggetto è di sola lettura.

Caldo ausiliare

L'Aidoo Pro comunicherà lo stato del caldo ausiliare. Questo oggetto è di sola lettura.

Temperatura impostata

La temperatura impostata dell'unità interna e il suo valore vengono comunicati al sistema BACnet e questo sarà in grado di modificarli. Questo parametro è di lettura e scrittura.

Temperatura ambiente (Localtemp)

La piattaforma BACnet può ottenere la temperatura ambiente di qualsiasi zona. È un oggetto di sola lettura.

Modo di funzionamento

L'Aidoo Pro comunicherà il modo di funzionamento del sistema o di ogni zona (in base al sistema connesso), rappresentandolo con un numero. Sono oggetti di lettura e scrittura. I modi sono:

- 0 → Stop
- 2 → Freddo
- 3 → Caldo
- 4 → Deumidificazione
- 6 → Ventilazione

Velocità

Questo parametro fa riferimento alla velocità del ventilatore dell'unità. L'Aidoo Pro comunicherà la velocità del sistema o di ogni zona (in base al sistema connesso), rappresentandolo con un numero. Sono oggetti di lettura e scrittura.

Alette

L'Aidoo Pro comunicherà la posizione delle alette rappresentandola con un numero. Sono oggetti di lettura e scrittura. La posizione va dall'1 al 9; il 10 è il modo Swing.

Errori

Se l'unità interna genera un errore, l'Aidoo Pro lo comunicherà alla piattaforma BACnet. Questo oggetto è di lettura.

DICHIARAZIONE DI CONFORMITÀ DELL'IMPLEMENTAZIONE DEL PRO- TOCOLLO BACNET

Date: Feb. 15,2021

Vendor Name: ALTRA S.L.

Product Name: Aidoo Pro

Product Model Number: AZAI6WSP_{xxx}

Applications Software Version: 6.XX Firmware Revision: 0.8.2 BACnet Protocol Revision: 12

Product Description:

This product provides the function of monitoring and control HVAC units

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) Aidoo Pro
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WritePropertyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTCTimeSynchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Writable Properties : Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

(3) Analog Value

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : 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

Writable Properties : Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

- ☐ BACnet IP, (Annex J)
- ☐ BACnet IP, (Annex J), Foreign Device
- ☐ ISO 8802-3, Ethernet (Clause 7)
- ☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____
- ☒ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200
- ☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-
- ☐ Point, EIA 232 (Clause 10), baud rate(s) : _____
- ☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
- ☐ LonTalk, (Clause 11), medium : _____
- ☐ Other : _____

IT

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

Networking Options:

- ☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.
- ☐ Annex H, BACnet Tunneling Router over IP
- ☐ BACnet / IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :

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

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

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

Airzone Cloud (IP)

Modbus slave

GYW control for HVAC 3rd party thermostat

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Política ambiental



- Nunca deite fora esta unidade com o lixo doméstico. Caso não sejam tratados adequadamente, os produtos elétricos e eletrônicos podem liberar substâncias que causam danos ao meio ambiente. A imagem de um recipiente riscado ao meio indica recolha seletiva de dispositivos elétricos, que são tratados de maneira diferente do lixo urbano. Para uma gestão ambiental correta, no final de sua vida útil, deverá levar a unidade a um centro de recolha adequado.
- As peças desta unidade poderão ser recicladas. Portanto, respeite a regulamentação em vigor sobre proteção ambiental.
- Entregue a unidade que não será mais utilizada ao seu distribuidor ou a um centro de coleta especializado.
- Os infratores estarão sujeitos às sanções e medidas estabelecidas pela lei de proteção do meio ambiente.

PT

Protocolo BACnet

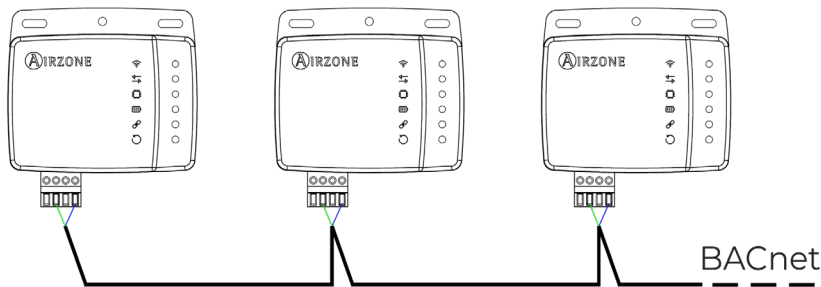
PORTA DE COMUNICAÇÕES RS-485

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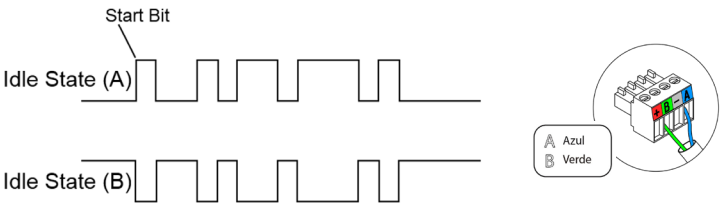
O RS-485, também conhecido como EIA-485, é um padrão de comunicação em barramento.

Barramento de integração	
Velocidade da porta de comunicação	De 300 a 115 200 bps
Comunicação	Half duplex
Comprimento da trama	8 bits
Bit de parada	1 bit
Controlo de fluxo	Nenhum
Paridade	Par

Ligação



Para o correto funcionamento dos sistemas Airzone, verifique se apenas os cabos de comunicação (verde-azul) estão ligados em cada terminal nos respetivos barramentos. Fixe os cabos respeitando o código de cores.



PROTOCOLO

O Aidoo Pro permite a um sistema de Gestão Técnica Centralizada (GTC) controlar todas as variáveis dos sistemas Airzone. O dispositivo utiliza um protocolo padrão aberto baseado na norma ASHRAE 135 e é compatível com:

- BACnet (ANSI/ASHRAE-135)
- BACnet MS/TP

PT

O Aidoo Pro é um dispositivo Plug&Play para sistemas Airzone que permite controlar e monitorizar as seguintes variáveis:

- Ligação/desligamento
- Temperatura ambiente
- Temperatura de referência.
- Estado do modo de funcionamento.
- Estado e velocidade do ventilador.

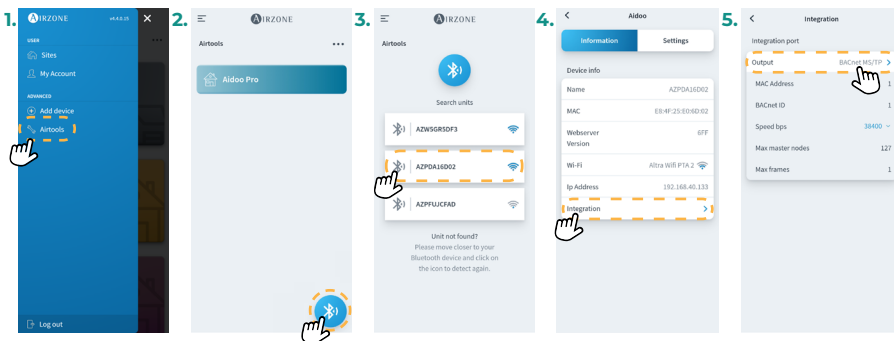
Aidoo Pro Wi-Fi

O Aidoo é um dispositivo BACnet escravo; por isso é necessário indicar o seu endereço. Para isso, associe o seu Aidoo através da aplicação Airzone Cloud (disponível para iOS e para Android) seguindo estes passos:

1. No ecrã principal aceda ao menu e selecione Airtools.
2. Inicie a configuração avançada via Bluetooth.
3. Selecione o seu Aidoo Pro na lista.

Nota: Se a sua unidade não aparecer, confirme se a função Bluetooth do seu dispositivo iOS ou Android está ativada e se o Aidoo está ligado e funciona corretamente.

4. Selecione "Integração".
5. Configure a saída como BACnet MS/TP e defina o endereço escravo.



Descarregue a aplicação Airzone Cloud

OBJETOS

Tipo de objeto compatível

Os objetos de controlo e monitorização do sistema Aidoo Pro compatíveis são atribuídos aos tipo de objeto padrão definidos pela BACnet.

Tipo de objeto		Compatível	Ponto de gestão Airzone
Accumulator	23		
Analog-input	0	√	Temperatura ambiente
Analog-Output	1		
Analog-Value	2	√	Temperatura de referência
Averaging	18		
Binary-input	3	√	Comunicação com a unidade interior
Binary-Output	4	√	Calor auxiliar
Binary-Value	5	√	Ligar e desligar
Calendar	6		
Command	7		
Device	8		
Event-Enrollment	9		
File	10		
Group	11		
Life-Safety-Point	21		
Life-Safety-Zone	22		
Loop	12		
Multistate-Input	13		
Multistate-Output	14	√	Modo de funcionamento (configuração)
Multistate-Value	19	√	Velocidade do ventiloconvetor (configuração)
Notification-Class	15		
Program	16		
Schedule	17		
Trend-Log	20		

Lista de objetos

A seguir, mostramos a lista completa de objetos disponíveis no Aidoo Pro. A disponibilidade dos objetos de comunicação depende da configuração do dispositivo e do tipo de instalação.

A disponibilidade do objeto de comunicação do Aidoo Pro está indicada no parâmetro “out of service” (fora de serviço) de cada objeto de comunicação, esteja ele disponível ou não disponível dentro do sistema.

O objeto de comunicação só terá valores “correct/valid” (correto/válido) quando o “out of service” for FALSE (FALSO).

Tipo de objeto	Registo	Leitura (R) / Escrita (W)	Descrição	Valores
Binary-value	0	R/W	Ligação/Desligamento	0 → Desligado, 1 → Ligado
Binary-input	0	R	Comunicação com a unidade interior	0 → Sem comunicação, 1 → Unidade interior pronta
Binary-input	1	R	Erros da unidade interior	0 → Sem erro, 1 → Unidade interior com erro
Binary-input	2	R	Entrada digital	0 → Inativa, 1 → Ativa
Binary-output	0	R	Calor auxiliar	0 → Inativa, 1 → Ativa
Analog-value	0	R/W	Ref.	Ref.
Analog-value	1	R	Localtemp	Temperatura ambiente
Multi-state-value	0	R/W	Modos	1 → Auto, 2 → Frio, 3 → Calor, 4 → Ventilação, 5 → Seco
	1	R/W	Velocidade	0 → Automática, 1 → Velocidade 1, 2 → Velocidade 2, 3 → Velocidade 3
	2	R/W	Lâminas	X → Posição X [1-9] 10 - Swing
Character-string-value	1	R	Erros	Código de erro da unidade interior

DESCRIÇÃO DETALHADA DOS OBJETOS

Comum a todos os objetos

Quando a unidade interior está a comunicar normalmente, pode ser estabelecida uma comunicação entre o Aidoo Pro e a unidade interior. O sistema de gestão técnica centralizada BACnet (GTC) terá acesso aos objetos da unidade Airzone.

Se a comunicação entre o Aidoo Pro e o sistema não for bem-sucedida, ou se o pedido de informação relacionada com o objeto de comunicação não for encontrado dentro do sistema Airzone, é ativada a propriedade do objeto "out of service" (fora de serviço).

Ligação/Desligamento

O Aidoo Pro comunicará o estado de cada zona específica. Através da plataforma BACnet, qualquer zona pode ser configurada como ligada/desligada. São objetos de leitura e escrita.

Comunicação com a unidade interior

Se a unidade interior perder a comunicação, o Aidoo Pro irá comunicar isto à BACnet. Este objeto é só de leitura.

Erros da unidade interior

Se a unidade interior gerar um erro, o Aidoo Pro irá comunicá-lo à plataforma BACnet. Este objeto é de leitura.

Entrada digital

O Aidoo Pro comunicará o estado da entrada digital. Este objeto é só de leitura.

Calor auxiliar

O Aidoo Pro comunicará o estado do calor auxiliar. Este objeto é só de leitura.

Temperatura de referência

A temperatura de referência da unidade interior e o seu valor são comunicados ao sistema BACnet e podem ser alterados pelo sistema BACnet. Este parâmetro é de leitura e escrita.

Temperatura ambiente (Localtemp)

A plataforma BACnet pode obter a temperatura ambiente de qualquer zona. É um objeto só de leitura.

Modo de funcionamento

O Aidoo Pro comunicará o modo de funcionamento do sistema ou de cada zona (dependendo do sistema ligado), representado por um número. São objetos de leitura e escrita. Estes modos são:

- 0 → Stop
- 2 → Frio
- 3 → Calor
- 4 → Seco
- 6 → Ventilação

Velocidade

Este parâmetro refere-se à velocidade do ventilador da unidade. O Aidoo Pro comunicará a velocidade do sistema ou de cada zona (dependendo do sistema ligado), representada por um número. São objetos de leitura e escrita.

Lâminas

O Aidoo Pro comunicará a posição das lâminas representada por um número. São objetos de leitura e escrita. A posição vai de 1 a 9; 10 é o modo Swing.

Erros

Se a unidade interior gerar um erro, o Aidoo Pro irá comunicá-lo à plataforma BACnet. Este objeto é de leitura.

DECLARAÇÃO DE CONFORMIDADE DA IMPLEMENTAÇÃO DO PROTOCOLO BACNET

Date: Feb. 15,2021

Vendor Name: ALTRA S.L.

Product Name: Aidoo Pro

Product Model Number: AZAI6WSP_{xxx}

Applications Software Version: 6.XX Firmware Revision: 0.8.2 BACnet Protocol Revision: 12

Product Description:

This product provides the function of monitoring and control HVAC units

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) Aidoo Pro
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WritePropertyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTC Time Synchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Writable Properties : Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

(3) Analog Value

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : 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

Writable Properties : Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

PT

(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

- ☐ BACnet IP, (Annex J)
- ☐ BACnet IP, (Annex J), Foreign Device
- ☐ ISO 8802-3, Ethernet (Clause 7)
- ☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____
- ☒ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200
- ☐ MS / TP slave (Clause 9), baud rate(s) : _____ Point-To-
- ☐ Point, EIA 232 (Clause 10), baud rate(s) : _____
- ☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
- ☐ LonTalk, (Clause 11), medium : _____
- ☐ Other : _____

PT

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

Networking Options:

- ☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.
- ☐ Annex H, BACnet Tunneling Router over IP
- ☐ BACnet / IP Broadcast Management Device (BBMD)
- Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :

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

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

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

Airzone Cloud (IP)

Modbus slave

GYW control for HVAC 3rd party thermostat

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Umweltschutz



- Das Gerät darf nicht über den Hausmüll entsorgt werden. Elektrische und elektronische Geräte enthalten Stoffe, die bei unsachgemäßer Behandlung Umweltschäden verursachen können. Das Symbol der durchgestrichenen Mülltonne weist auf die Notwendigkeit einer vom Hausmüll getrennten Entsorgung elektrischer Geräte hin. Für eine umweltgerechte Entsorgung muss das Gerät am Ende seiner Lebensdauer einer geeigneten Sammelstelle zugeführt werden.
- Die Gerätebauteile können wiederverwertet werden. Beachten Sie die geltenden Umweltschutzbestimmungen.
- Geben Sie das Altgerät beim Austausch an Ihren Händler zurück oder führen Sie es einer geeigneten Sammelstelle zu.
- Verstöße werden nach Maßgabe der einschlägigen Umweltschutzgesetze geahndet.

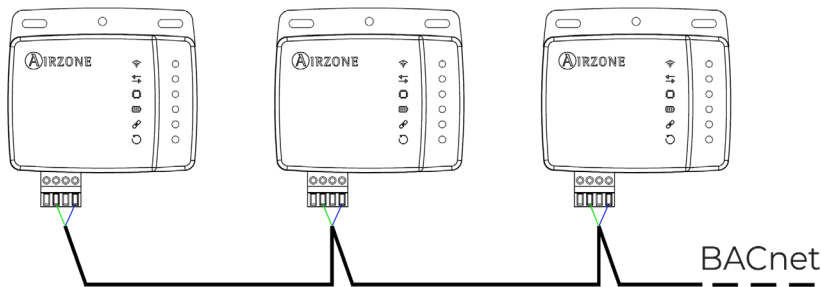
BACnet-Protokoll

KOMMUNIKATIONSANSCHLUSS RS-485

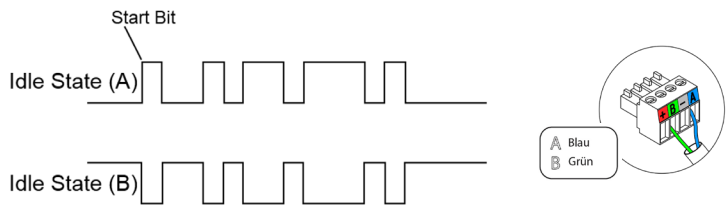
RS-485, auch bekannt als EIA-485, ist ein Buskommunikationsstandard.

Integrationsbus	
Geschwindigkeit des Kommunikationsanschlusses	300 bis 115200 bps
Kommunikation	Halbduplex
Framelänge	8-Bit
Stoppbit	1-Bit
Flusskontrolle	Keine
Parität	Gerade

Anschluss



Für den ordnungsgemäßen Betrieb der Airzone-Systeme ist zu überprüfen, dass nur die Kommunikationskabel (grün-blau) an den jeweiligen Klemmen der Busse angeschlossen sind. Klemmen Sie die Leitungen unter Beachtung der Farbcodes an.



PROTOKOLL

Das Aidoo Pro ermöglicht die Steuerung aller Stellgrößen der Airzone-Systeme über ein Gebäudemanagementsystem (Building Management System - BMS). Das Gerät verwendet ein offenes Standardprotokoll, das auf dem ASHRAE-Standard 135 basiert und folgende Kompatibilitäten bietet:

- BACnet (ANSI/ASHRAE-135)
- BACnet MS/TP

Das Aidoo Pro ist ein Plug&Play-Gerät für Airzone-Systeme, mit dem folgende Stellgrößen gesteuert und überwacht werden können:

- Ein-/Ausschalten
- Raumtemperatur.
- Solltemperatur.
- Status des Betriebsmodus.
- Status und Drehzahl des Gebläses.

DE

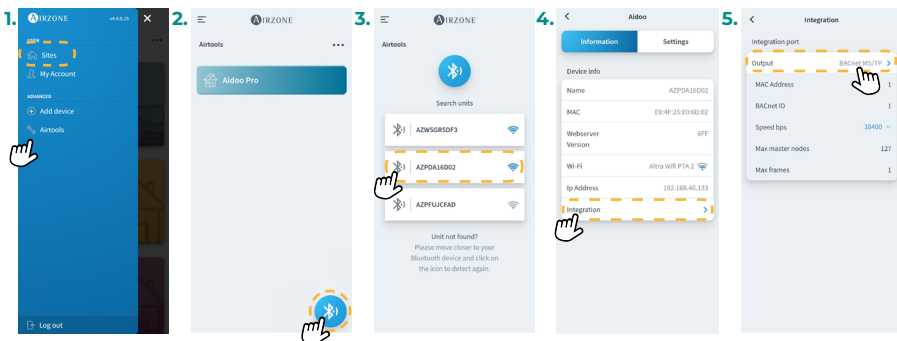
Aidoo Pro WLAN

Das Aidoo ist ein BACnet-Slave-Gerät, daher ist es notwendig, seine Adresse anzugeben. Verknüpfen Sie dazu Ihr Aidoo über die „Airzone Cloud“-App (verfügbar für iOS und Android) nach folgender Anweisung:

1. Rufen Sie auf dem Hauptbildschirm das Menü auf und wählen Sie Airtools.
2. Beginnen sie mit den erweiterten Einstellungen über Bluetooth.
3. Wählen Sie Ihr Aidoo Pro aus der Liste aus.

Hinweis: Wenn Ihr Gerät nicht angezeigt wird, vergewissern Sie sich, dass die Bluetooth-Funktion Ihres iOS- oder Android-Geräts aktiviert ist, dass das Aidoo eingeschaltet ist und ordnungsgemäß funktioniert.

4. Wählen Sie "Integration".
5. Konfigurieren Sie den Ausgang als BACnet MS/TP und geben Sie die Slave-Adresse ein.



Download Airzone Cloud-App

OBJEKTE

Art der unterstützten Objekte

Die vom Aidoo Pro unterstützten Steuerungs- und Überwachungsobjekte werden den durch BACnet definierten Standard-Objektypen zugewiesen.

Art des Objekts		Unterstützt	Airzone-Regelpunkt
Accumulator	23		
Analog-Input	0	√	Raumtemperatur
Analog-Output	1		
Analog-Value	2	√	Solltemperatur
Averaging	18		
Binary-Input	3	√	Kommunikation mit IU
Binary-Output	4	√	Zusatzheizung
Binary-Value	5	√	Ein-/Ausschalten
Calendar	6		
Command	7		
Device	8		
Event-Enrollment	9		
File	10		
Group	11		
Life-Safety-Point	21		
Life-Safety-Zone	22		
Loop	12		
Multistate-Input	13		
Multistate-Output	14	√	Betriebsmodus (Konfiguration)
Multistate-Value	19	√	Gebläsedrehzahl (Konfiguration)
Notification-Class	15		
Program	16		
Schedule	17		
Trend-Log	20		

Objektliste

Nachstehend finden Sie die vollständige Liste der auf Airzone Pro verfügbaren Objekte. Die Verfügbarkeit der Kommunikationsobjekte hängt von der Konfiguration des Geräts und der Art der Anlage ab.

Die Verfügbarkeit des Kommunikationsobjekts des Aidoo-Geräts wird über den Parameter "out of service" (außer Betrieb) der einzelnen Kommunikationsobjekte unabhängig davon angezeigt, ob das Objekt im System verfügbar ist oder nicht.

Das Kommunikationsobjekt weist nur dann die Werte correct/valid (richtig/gültig) auf, wenn "out of service" FALSE (FALSCH) ist.

Art des Objekts	Register	Lesen (R) / Schreiben (W)	Beschreibung	Werte
Binary-value	0	R/W	Ein-/Ausschalten	0 → Aus, 1 → Ein
Binary-input	0	R	Kommunikation mit IU	0 → Keine Kommunikation, 1 → IU-Liste
Binary-input	1	R	IU-Fehler	0 → Keine Fehler, 1 → IU mit Fehler
Binary-input	2	R	Digitaleingang	0 → Inaktiv, 1 → Aktiv
Binary-output	0	R	Zusatzheizung	0 → Inaktiv, 1 → Aktiv
Analog-value	0	R/W	Sollwert	Sollwert
Analog-value	1	R	Localtemp	Raumtemperatur
Multi-state-value	0	R/W	Betriebsmodi	1 → Auto, 2 → Kühlen, 3 → Heizen, 4 → Lüften, 5 → Trocknen
	1	R/W	Drehzahl	0 → Automatisch, 1 → Drehzahl 1, 2 → Drehzahl 2, 3 → Drehzahl 3
	2	R/W	Lamellen	X → Position X [1-9] 10 - Schwingen
Character-string-value	1	R	Fehler	IU-Fehlercode

DETAILLIERTE BESCHREIBUNG DER OBJEKTE

Gültig für alle Objekte

Wenn die Kommunikation mit dem Innengerät normal verläuft, kann eine Kommunikationsverbindung zwischen dem Aidoo Pro und dem Innengerät hergestellt werden. So kann über das Gebäudemanagementsystem (BMS) auf alle Objekte des Airzone-Geräts zugegriffen werden.

Wenn die Kommunikation zwischen dem Aidoo Pro und dem System gestört ist oder die mit dem Kommunikationsobjekt verbundene Datenanfrage nicht innerhalb des Airzone-Systems liegt, dann wird die Objekteigenschaft „Out of service“ (außer Betrieb) aktiviert.

Ein-/Ausschalten

Das Aidoo Pro meldet den Status jeder einzelnen Zone zurück. Über die BACnet-Plattform kann jede Zone als eingeschaltet oder ausgeschaltet konfiguriert werden. Es handelt sich um Lese- und Schreibobjekte.

Kommunikation mit IU

Wenn das Innengerät die Kommunikation verliert, wird das Aidoo Pro dies an BACnet melden. Dieses Objekt ist ein Nur-Lese-Objekt.

IU-Fehler

Wenn das Innengerät einen Fehler ausgibt, wird das Aidoo Pro dies an die BACnet-Plattform melden. Dieses Objekt ist ein Lese-Objekt.

Digitaleingang

Das Aidoo Pro meldet den Status des Digitaleingangs. Dieses Objekt ist ein Nur-Lese-Objekt.

Zusatzheizung

Das Aidoo Pro meldet den Status der Zusatzheizung. Dieses Objekt ist ein Nur-Lese-Objekt.

Solltemperatur

Die Solltemperatur der Inneneinheit und der Istwert werden an das BACnet-System gemeldet und können von diesem geändert werden. Es handelt sich um einen Lese- und Schreibparameter.

Raumtemperatur (Localtemp).

Die BACnet-Plattform kann die Raumtemperatur jeder Zone auslesen. Es handelt sich um ein Nur-Lese-Objekt.

Betriebsmodus

Das Aidoo Pro meldet den Betriebsmodus des Systems oder der einzelnen Zonen (je nach angeschlossener Anlage), dargestellt durch eine Nummer. Es handelt sich um Lese- und Schreibobjekte. Die Betriebsmodi sind:

- 0 → Stopp
- 2 → Kühlen
- 3 → Heizen
- 4 → Trocknen
- 6 → Lüften

Geschwindigkeit

Dieser Parameter bezieht sich auf die Drehzahl des Gerätegebläses. Das Aidoo Pro meldet die Luftgeschwindigkeit des Systems oder der einzelnen Zonen (je nach angeschlossener Anlage), dargestellt durch eine Nummer. Es handelt sich um Lese- und Schreibobjekte.

Lamellen

Das Aidoo Pro meldet die Lamellenstellung in Form einer Zahl. Es handelt sich um Lese- und Schreibobjekte. Die Stellungen werden mit 1 bis 9 bezeichnet, 10 ist der Schwingbetrieb.

Fehler

Wenn das Innengerät einen Fehler ausgibt, wird das Aidoo Pro dies an die BACnet-Plattform melden. Dieses Objekt ist ein Lese-Objekt.

KONFORMITÄTSERKLÄRUNG FÜR DIE IMPLEMENTIERUNG DES BAC-NET-PROTOKOLLS

Date: Feb. 15,2021

Vendor Name: ALTRA S.L.

Product Name: Aidoo Pro

Product Model Number: AZAI6WSP_{xxx}

Applications Software Version: 6.XX Firmware Revision: 0.8.2 BACnet Protocol Revision: 12

Product Description:

This product provides the function of monitoring and control HVAC units

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) Aidoo Pro
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K) :

	Supported BIBBs	BIBB Name
Data Sharing	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
	DS-WP-B	Data Sharing-WriteProperty-B
	DS-WPM-B	Data Sharing-WritePropertyMultiple-B
	DS-COV-B	Data Sharing-COV-B
	DS-COVU-B	Data Sharing-COV-Unsolicited-B
Alarm and Event Management	AE-N-I-B	Alarm and Event-Notification Internal-B
Device Management	DM-DDB-A	Device Management-Dynamic Device Binding-A
	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B
	DM-DCC-B	Device Management-DeviceCommunicationControl-B
	DM-TS-B	Device Management-Time Synchronization-B
	DM-UTC-B	Device Management-UTCTimeSynchronization-B

Standard Object Types Supported:

(2) Analog Input

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : Reliability, COV_Increment, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Writable Properties : Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

(3) Analog Value

Dynamically Creatable: No

Dynamically Deletable : No

Optional Properties Supported : 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

Writable Properties : Present_Value, Time_Delay, Notification_Class, High_Limit, Low_Limit, Deadband, Limit_Enable, Event_Enable, Notify_Type

Proprietary Properties : n / a

Property Range Restrictions : n / a

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(2) Binary Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(3) Binary Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(4) Binary Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability, Priority_Array, Relinquish_Default
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(5) Device

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Max_Segment_Accepted, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, APDU_Segment_Timeout, Active_COV_Subscriptions
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(6) Multi-state Input

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Description, Reliability
Writable Properties :	n / a
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(7) Multi-state Output

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	Reliability
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(8) Notification Class

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Recipient_List
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

(19) Multi-state Value

Dynamically Creatable:	No
Dynamically Deletable :	No
Optional Properties Supported :	n / a
Writable Properties :	Present_Value
Proprietary Properties :	n / a
Property Range Restrictions :	n / a

Data Link Layer Options:

- ☐ BACnet IP, (Annex J)
- ☐ BACnet IP, (Annex J), Foreign Device
- ☐ ISO 8802-3, Ethernet (Clause 7)
- ☐ ANSI / ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ☐ ANSI / ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____
- ☒ MS / TP master (Clause 9), baud rate(s) : 9600, 19200, 38400, 57600, 76800, 115200
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- ☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
- ☐ LonTalk, (Clause 11), medium : _____
- ☐ Other : _____

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

Networking Options:

- ☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS / TP, etc.
- ☐ Annex H, BACnet Tunneling Router over IP
- ☐ BACnet / IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported :

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

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

If this product is a communication gateway, describe the types of non-BACnet equipment / networks(s) that the gateway supports:

Airzone Cloud (IP)

Modbus slave

GYW control for HVAC 3rd party thermostat



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v.100

