

BACnet Specification

for use by heating contractor

Communication with heating systems via BACnet



Vitogate 300



Product may not be exactly as shown

IMPORTANT

**Read and save these instructions
for future reference.**



Protocol Implementation Conformance Statement (PICS)

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BACnet PICS Vitogate 300

Date:10/11/2014
 Vendor name:Viessmann Elektronik GmbH
 Product designation:Vitogate 300
 Product model number:1.0
 Application software version: .1.3.0
 Firmware revision:Viessmann BACstack 1.0
 BACnet protocol version:.....1
 BACnet protocol revision:.....12

Product description:

The Viessmann Vitogate 300 provides access from Viessmann LON devices to BACnet networks acting as a BACnet server.

BACnet Standardized Device Profile (Annex L):

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

BACnet PICS Vitogate 300 *(continued)*

List all BACnet Interoperability Building Blocks supported (Annex K):

- 1. Data-sharing BIBBs
 - Data Sharing Read-Property-BDS-RP-B
 - Data Sharing Read-Property-Multiple-B.....DS-RPM-B
 - Data Sharing Write-Property-B.....DS-WP-B
 - Data Sharing Write Property-Multiple-B.....DS-WPM-B
 - Data Sharing COV-B.....DS-COV-B
 - Data Sharing COVP-B.....DS-COVP-B

- 2. Alarm and Event BIBBs
 - Alarm and Event-Notification-Internal B.....AE-N-I-B
 - Alarm and Event-ACK-B.....AE-ACK-B
 - Alarm and Event-Alarm Summary-B.....AE-ASUM-B
 - Alarm and Event-Enrollment Summary-B.....AE-ESUM-B
 - Alarm and Event-Event Information-B.....AE-INFO-B

- 3. Scheduling BIBBs
 - Scheduling-Internal-B.....SCHED-I-B

- 4. Trending BIBBs
 - Trending-Viewing and Modifying Trends Internal-B.....T-VMT-I-B
 - Trending-Automated Trend Retrieval-B.....T-ATR-B

- 5. Device Management BIBBs
 - Device-Management-Dynamic Device Binding-B.....DM-DDB-B
 - Device-Management-Dynamic Object Binding-B.....DM-DOB-B
 - Device-Management-Device Communication Control-B.....DM-DCC-B
 - Device-Management-Time Synchronization-B.....DM-TS-B
 - Device-Management-UTC Time Synchronization-B.....DM-UTC-B
 - Device-Management-Reinitialize Device-B.....DM-RD-B
 - Device-Management-List Manipulation-B.....DM-LM-B
 - Device-Management-Restart-B.....DM-R-B

- 6. Network Management BIBBs
 - No Network Management BIBBs supported.

Segmentation capability:

- Segmented requests supported Window size: 16**
- Segmented requests supported Window size: 16**

Date 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, 76800, 115200**
- MS/TP slave (Clause 9), baud rate(s): 9600, 19200, 38400, 76800, 115200
- 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**
(Yes, if multiple data layer activated. Changeable by configuration)
- Annex H, BACnet tunneling router over IP
- BACnet/IP Broadcast Management Device (BBMD)**
- Does the BBMD support registrations by foreign devices?**
Number of FD entries: 50 (configurable)

Character sets supported:

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

- UTF-8**
- IBMTM/Microsoft™ DBCS
- ISO 8859-1
- ISO 10 646 (UCS-2)
- ISO 10 646 (UCS-4)
- JIS C 6226

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

This BACnet gateway provides interfaces to Viessmann LON/RDAP communication protocol.

Standard Object Types Supported

The supported object types are:

- Analog input(0)
 - Analog value(2)
 - Binary input(3)
 - Binary value(5)
 - Device(8)
 - Multistate input(13)
 - Notification class(15)
 - Schedule(17)
 - Multistate value(19)
 - Trend log(20)
- Creation and deletion of objects is not supported.

Analog Input

Property identifier	Property datatype	Conf. code	Vitagate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Present_Value	REAL	R* 1	R* 1/W
Description	CharacterString	O	R
Status_Flags	BACnetStatusFlags	R	R
Event_State	BACnetEventState	R	R
Reliability	BACnetReliability	O	R* 1/W
Out_Of_Service	BOOLEAN	R	R/W
Units	BACnetEngineeringUnits	R	R
Min_Pres_Value	REAL	O	R
Max_Pres_Value	REAL	O	R
Resolution	REAL	O	R
COV_Increment	REAL	O* 2	R/W
Time_Delay	Unsigned	O* 3	-/R
Notification_Class	Unsigned	O* 3	-/R
High_Limit	REAL	O* 3	-/R
Low_Limit	REAL	O* 3	-/R
Deadband	REAL	O* 3	-/R
Limit_Enable	BACnetLimitEnable	O* 3	-/R
Event_Enable	BACnetEventTransitionBits	O* 3	-/R
Acked_Transitions	BACnetEventTransitionBits	O* 3	-/R
Notify_Type	BACnetNotifyType	O* 3	-/R
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O* 3	-/R

* 1 This property is required to be writable when Out_Of_Service is TRUE.

* 2 This property is required if the object supports COV reporting.

* 3 These properties are required if the object supports intrinsic reporting.

Analog Value

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Present_Value	REAL	R* 1	R/W
Description	CharacterString	O	R
Status_Flags	BACnetStatusFlags	R	R
Event_State	BACnetEventState	R	R
Reliability	BACnetReliability	O	R* 1/W
Out_Of_Service	BOOLEAN	R	R/W
Units	BACnetEngineeringUnits	R	R
COV_Increment	REAL	O* 2	R/W
Time_Delay	Unsigned	O* 3	-/R
Notification_Class	Unsigned	O* 3	-/R
High_Limit	REAL	O* 3	-/R
Low_Limit	REAL	O* 3	-/R
Deadband	REAL	O* 3	-/R
Limit_Enable	BACnetLimitEnable	O* 3	-/R
Event_Enable	BACnetEventTransitionBits	O* 3	-/R
Acked_Transitions	BACnetEventTransitionBits	O* 3	-/R
Notify_Type	BACnetNotifyType	O* 3	-/R
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O* 3	-/R

* 1 This property is required to be writable when Out_Of_Service is TRUE.

* 2 This property is required if the object supports COV reporting.

* 3 These properties are required if the object supports intrinsic reporting.

Binary Input

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Present_Value	BACnetBinaryPV	R*1	R*1/W
Description	CharacterString	O	R
Status_Flags	BACnetStatusFlags	R	R
Event_State	BACnetEventState	R	R
Reliability	BACnetReliability	O	R*1/W
Out_Of_Service	BOOLEAN	R	R/W
Polarity	BACnetPolarity	R	R
Inactive_Text	CharacterString	O*4	R
Active_Text	CharacterString	O*4	R
Change_Of_State_Time	BACnetDateTime	O*5	-/R
Time_Of_State_Count	Unsigned	O*5	-/R
Time_Of_State_Count_Reset	BACnetDateTime	O*5	-/R
Elapsed_Active_Time	Unsigned32	O*6	-/R
Time_Of_Active_Time_Reset	BACnetDateTime	O*6	-/R
Time_Delay	Unsigned	O*3	-/R
Notification_Class	Unsigned	O*3	-/R
Alarm_Value	BACnetBinaryPV	O*3	-/R
Event_Enable	BACnetEventTransitionBits	O*3	-/R
Acked_Transitions	BACnetEventTransitionBits	O*3	-/R
Notify_Type	BACnetNotifyType	O*3	-/R
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O*3	-/R

*1 This property is required to be writable when Out_Of_Service is TRUE.

*3 These properties are required if the object supports intrinsic reporting.

*4 If one of the optional properties Inactive_Text or Active_Text is present, then both of these properties shall be present.

*5 If one of the optional properties Change_Of_State_Time, Change_Of_State_Count, or Time_Of_State_Count_Reset is present, then all of these properties shall be present.

*6 If one of the optional properties Elapsed_Active_Time or Time_Of_Active_Time_Reset is present, then both of these properties shall be present.

Binary Value

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Present_Value	BACnetBinaryPV	R*1	R/W
Description	CharacterString	O	R
Status_Flags	BACnetStatusFlags	R	R
Event_State	BACnetEventState	R	R
Reliability	BACnetReliability	O	R*1/W
Out_Of_Service	BOOLEAN	R	R/W
Polarity	BACnetPolarity	R	R
Inactive_Text	CharacterString	O*4	R
Active_Text	CharacterString	O*4	R
Change_Of_State_Time	BACnetDateTime	O*5	-/R
Time_Of_State_Count	Unsigned	O*5	-/R
Time_Of_State_Count_Reset	BACnetDateTime	O*5	-/R
Elapsed_Active_Time	Unsigned32	O*6	-/R
Time_Of_Active_Time_Reset	BACnetDateTime	O*6	-/R
Time_Delay	Unsigned	O*3	-/R
Notification_Class	Unsigned	O*3	-/R
Alarm_Value	BACnetBinaryPV	O*3	-/R
Event_Enable	BACnetEventTransitionBits	O*3	-/R
Acked_Transitions	BACnetEventTransitionBits	O*3	-/R
Notify_Type	BACnetNotifyType	O*3	-/R
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O*3	-/R

*1 This property is required to be writable when Out_Of_Service is TRUE.

*3 These properties are required if the object supports intrinsic reporting.

*4 If one of the optional properties Inactive_Text or Active_Text is present, then both of these properties shall be present.

*5 If one of the optional properties Change_Of_State_Time, Change_Of_State_Count, or Time_Of_State_Count_Reset is present, then all of these properties shall be present.

*6 If one of the optional properties Elapsed_Active_Time or Time_Of_Active_Time_Reset is present, then both of these properties shall be present.

Device

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
System_Status	BACnetDeviceStatus	R	R
Vendor_Name	CharacterString	R	R
Vendor_Identifier	Unsigned16	R	R
Model_Name	CharacterString	R	R
Firmware_Revision	CharacterString	R	R
Application_Software_Vers.	CharacterString	R	R
Location	CharacterString	R	R
Description	CharacterString	O	R
Protocol_Version	Unsigned	R	R
Protocol_Revision	Unsigned	R	R
Protocol_Services_Supported	BACnetServicesSupported	R	R
Protocol_Object_Types_Sup.	BACnetObjectTypesSupported	R	R
Object_List	BACnetARRAY[N] of BACnetObjectld.	R	R
Structured_Object_List	BACnetARRAY[N] of BACnetObjectld.	O	-
Max_APDU_Length_Accepted	Unsigned	R	R
Segmentation_Supported	BACnetSegmentation	R	R
Max_Segments_Accepted	Unsigned	O*7	R
Local_Time	Time	O*8*9	R
Local_Date	Date	O*8*9	R
UTC_Offset	Integer	O*8*9	R

*7 Required if segmentation of any kind is supported.

*8 If the device supports the execution of the TimeSynchronization service, then these properties shall be present.

*9 If the device supports the execution of the UTCTimeSynchronization service, then these properties shall be present.

Device *(continued)*

Property identifier	Property datatype	Conf. code	Vitogate
Daylight_Savings_Status	Boolean	O*8*9	R
APDU_Segment_Timeout	Unsigned	O*7	R
APDU_Timeout	Unsigned	O	R
Number_Of_APDU_Retries	Unsigned	O	R
Time_Synch_Recipients.	List of BACnetRecipient	O*10	-
Max_Master	Unsigned(1..127)	O*11	-/R
Max_Info_Frames	Unsigned	O*11	-/R
Device_Address_Binding	List of BACnetAddressBinding	R	R
Database_Revision	Unsigned	R	R
Configuration_Files	BACnetARRAY[3] of BACnetObjectId	O*12	-
Last_Restore_Time	BACnetTimeStamp	O*12	-
Backup_Failure_Timeout	Unsigned16	O*13	-
Backup_Preparation_Time	Unsigned16	O*13	-
Restore_Preparation_Time	Unsigned16	O*13	-
Restore_Completion_Time	Unsigned16	O*13	-
Backup_And_Restore_State	BACnetBackupState	O*13	-
Active_COV_Subscriptions	List of BACnetCOVSubscription	O*14	R
Slave_Proxy_Enable	BACnetARRAY[3] of Boolean	O*15	-
Manual_Slave_Address_Bind.	List of BACnetAddressBinding	O*15	-
Auto_Slave_Discovery	BACnetARRAY[N] of Boolean	O*16	-
Slave_Address_Binding	List of BACnetAddressBinding	O*17	-
Last_Restart_Reason	BACnetRestartReason	O*18	R
Time_Of_Device_Restart	BACnetTimeStamp	O*18	R
Restart_Notification_Recip.	List of BACnetRecipient	O*18	R/W
UTC_Time_Synch_Recip.	List of BACnetRecipient	O*10	-
Time_Synchronization_Interv.	Unsigned	O*19	-
Align_Intervals	Boolean	O*19	-
Interval_Offset	Unsigned	O*19	-

*7 Required if segmentation of any kind is supported.

*8 If the device supports the execution of the TimeSynchronization service, then these properties shall be present.

*9 If the device supports the execution of the UTCTimeSynchronization service, then these properties shall be present.

*10 If this property is present, then Time_Synchronization_Interval, Align_Intervals and Interval_Offset shall be present. If present, this property shall be writable.

*11 These properties are required if the device is an MS/TP master node.

*12 These properties are required if the device supports the backup and restore procedures.

*13 This property must be present and writable if the device supports the backup and restore procedures.

*14 This property is required if the device supports execution of either the SubscribeCOV or SubscribeCOVProperty service.

*15 This property shall be present and writable if the device is capable of being a slave-proxy device.

*16 This property shall be present if the device is capable of being a slave-proxy device that implements automatic discovery of slaves.

*17 This property shall be present if the device is capable of being a slave-proxy device.

*18 These properties are required if the device supports the restart procedure as described in Clause 19.3.

*19 If either Time_Synchronization_Recipients or UTC_Time_Synchronization_Recipients is present, then this property shall be present and writable.

Multistate Input

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Present_Value	Unsigned	R*1	R*1/W
Description	CharacterString	O	R
Status_Flags	BACnetStatusFlags	R	R
Event_State	BACnetEventState	R	R
Reliability	BACnetReliability	O	R*1/W
Out_Of_Service	BOOLEAN	R	R/W
Number_Of_States	Unsigned	R	R
State_Text	BACnetARRAY[N] of CharacterString	O	R
Time_Delay	Unsigned	O*3	-/R
Notification_Class	Unsigned	O*3	-/R
Alarm_Values	List of unsigned	O*3	-/R
Fault_Values	List of unsigned	O*3	-/R
Event_Enable	BACnetEventTransitionBits	O*3	-/R
Acked_Transitions	BACnetEventTransitionBits	O*3	-/R
Notify_Type	BACnetNotifyType	O*3	-/R
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O*3	-/R

Notification Class

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Description	CharacterString	O	R
Notification_Class	Unsigned	R	R
Priority	BACnetARRAY[3] of Unsigned	R	R
Ack_Required	BACnetEventTransitionBits	R	R
Recipient_List	List of BACnetDestination	R	R/W

*1 This property is required to be writable when Out_Of_Service is TRUE.

*3 These properties are required if the object supports intrinsic reporting.

Schedule

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Present_Value	Unsigned	O	R* 1/W
Description	CharacterString	R	R
Effective_Period	BACnetDateRange	R	R/W
Weekly_Schedule	BACnetARRAY[7]of BACnetDailySchedule	O* 20	R/W
Exception_Schedule	BACnetARRAY[N]of BACnetSpecialEvent	O* 20	R/W
Schedule_Default	Unsigned	R	R
List_Of_B.._References	List of BACnet...Reference	R	R
Priority_For_Writing	Unsigned (1..16)	R	R
Status_Flags	BACnetStatusFlags	R	R
Reliability	BACnetReliability	O	R/* 1W
Out_Of_Service	BOOLEAN	R	R/W

Multistate Value

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Present_Value	Unsigned	R* 1	R/W
Description	CharacterString	R	R
Status_Flags	BACnetStatusFlags	R	R
Event_State	BACnetEventState	R	R
Reliability	BACnetReliability	O* 21	R* 1/W
Out_Of_Service	BOOLEAN	R	R/W
Number_Of_States	Unsigned	R	R
State_Text	BACnetARRAY[N] of CharacterString	O	R
Time_Delay	Unsigned	O* 3	-/R
Notification_Class	Unsigned	O* 3	-/R
Alarm_Values	List of unsigned	O* 3	-/R
Fault_Values	List of unsigned	O* 3	-/R
Event_Enable	BACnetEventTransitionBits	O* 3	-/R
Acked_Transitions	BACnetEventTransitionBits	O* 3	-/R
Notify_Type	BACnetNotifyType	O* 3	-/R
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O* 3	-/R

* 1 This property is required to be writable when Out_Of_Service is TRUE.

* 3 These properties are required if the object supports intrinsic reporting.

* 20 At least one of these properties is required.

* 21 This property shall be required if Fault_Values is present.

Trend Log

Property identifier	Property datatype	Conf. code	Vitogate
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Description	CharacterString	O	R
Enable	BOOLEAN	W	W
Start_Time	BACnetDateTime	O*22*23	R/W
Stop_Time	BACnetDateTime	O*22*23	R/W
Log_DeviceObjectProperty	BACnetDeviceObjectPropertyReference	O*22	R
Log_Interval	Unsigned	O*22*24	R
Stop_When_Full	Boolean	R	R
Buffer_Size	Unsigned32	R	R
Log_Buffer	List of BACnetLogRecord	R	R
Record_Count	Unsigned32	W	W
Total_Record_Count	Unsigned32	R	R
Notification_Threshold	Unsigned32	O*25	-/R
Records_Since_Notification	Unsigned32	O*25	-/R
Last_Notify_Record	Unsigned32	O*25	-/R
Event_State	BACnetEventState	R	R
Notification_Class	Unsigned	O*25	-/R
Event_Enable	BACnetEventTransitionBits	O*25	-/R
Acked_Transitions	BACnetEventTransitionBits	O*25	-/R
Notify_Type	BACnetNotifyType	O*25	-/R
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O*25	-/R
Logging_Type	BACnetLoggingType	R	R
Align_Intervals	Boolean	O*26	R
Interval_Offset	Unsigned	O*26	R
Status_Flags	BACnetStatusFlags	R	R
Reliability	BACnetReliability	O	R

*22 These properties are required to be present if the monitored property is a BACnet property.

*23 If present, these properties are required to be writable.

*24 If present, this property is required to be writable when Logging_Type has the value POLLED or the value COV. Also, if present, this property is required to be read-only if Logging_Type has the value TRIGGERED.

*25 These properties are required to be present if the object supports intrinsic reporting.

*26 These properties are required to be present if the object supports clock-aligned logging.

