

SIEMENS



Climatix™

BACnet Protocol Implementation Conformance Statement (PICS)

Basic documentation

Siemens Switzerland Ltd.
Building Technologies Group
International Headquarters
Gubelstrasse 22
CH-6301 Zug
Tel. +41 41-724 24 24
Fax +41 41-724 35 22
www.siemens.com/sbt

© 2008 Siemens Switzerland Ltd.
Subject to change

Table of contents

1	About this document	5
1.1	Revision history	5
1.2	Reference documents.....	5
1.3	Before you start	5
2	Climatix PICS	7
2.1	Product information.....	7
2.2	Product model number.....	7
2.3	Product description	7
2.4	BACnet standardized device profile (Annex L).....	7
2.5	BACnet interoperability building blocks supported (Annex K).....	8
2.6	Standard object types supported	9
2.7	Standard object types description.....	10
2.8	Segmentation capability	23
2.9	Data Link Layer options	23
2.10	Device address binding.....	23
2.11	Networking options	23
2.12	Character sets supported.....	24
Index	25

1 About this document

1.1 Revision history

Version	Date	Changes	Section	Pages
	08.11.2008	First edition		
	27.02.2009	Reworked for VVS8		
	14.07.2009	Added data for Trend Log	2.5, 2.6, 2.7	8, 9, 18
	22.10.2009	Removed Unsolicited COVs Limit of Max_Master changed to 127	2.5 2.7	8 15
	12.04.2011	Reworked for VVS9 and BTL	2.5, 2.6, 2.7	8, 9, 16, 19, 20

1.2 Reference documents

Ref.	Document titel	Type of document	Document No.

1.3 Before you start

Trademark

The trademark used in this document is listed together with it's legal owner in the following table. The use of this trademark is subject to international and national statutory provisions.

Trademark	Legal owner
BACnet™	American National Standard (ANSI/ASHRAE 135-1995)

Further to the note in this section, and to facilitate the reading of the text, this trademark will not be indicated elsewhere in the text (e.g. by use of symbol ™).

Copyright

This document may be duplicated and distributed only with the express permission of Siemens, and may be passed only to authorized persons or companies with the required technical knowledge.

Before you start, *continued*

Quality assurance

The document has been prepared with great care.

- The contents is checked at regular intervals.
- Any corrections necessary are included in subsequent versions.

Please ensure that you are aware of the latest revision date of the documentation.

If you find any lack of clarity while using this document, or if you have any criticisms or suggestions, please contact the product manager in your nearest branch office, or write directly to the support team at Headquarters in Zug (see below).

Support address:

Siemens Switzerland Ltd.

Building Technologies Group

International Headquarters

Field Support 5500

Gubelstrasse 22

6301 Zug, Switzerland

Tel. +41 41 724 5500

Fax. +41 41 724 5501

E-mail: fieldsupport-zug.ch.sbt@siemens.com

2 Climatix PICS

2.1 Product information

Date : 10.06.2011
Vendor name : Siemens Building Technologies (Vendor ID 7)
Product name : Climatix
Product model number : (see table below)
BACnet protocol version : 1.6
Application software version –
Firmware revision :9.22

2.2 Product model number

Product	Description	Data Link Layer
Pol908.00	Communication Module IP	IP
Pol904.00	Communication Module MS/TP	MS/TP

2.3 Product description

The Climatix is a freely configurable process unit with focus on HVAC.

2.4 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)

2.5 BACnet interoperability building blocks supported (Annex K)

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

2.6 Standard object types supported

Object type	Supported	Can be created dynamically	Can be deleted dynamically
Analog Input	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analog Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analog Value	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Input	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Binary Value	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calendar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Command	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Device	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Event Enrollment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
File	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Loop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multi-State Input	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multi-State Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multi-State Value	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notification Class	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schedule	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Averaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trend Log	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Life-Safety-Point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Life-Safety-Zone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accumulator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pulse-Converter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.7 Standard object types description

Analog Input

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Present_Value	(X)	
Description		
Status_Flags		
Event_State		
Reliability		
Out_Of_Service	X	
Units		
Max_Pres_Value		
Min_Pres_Value		
COV_Increment	X	0 .. maxReal
Time_Delay		
Notification_Class		
High_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value And High_Limit > Low_Limit
Low_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value And High_Limit > Low_Limit
Deadband	X	0 .. maxReal
Limit_Enable	X	
Event_Enable	X	
Acked_Transitions		
Notify_Type		
Event_Time_Stamps		

Standard object types description, *continued*

Analog Output

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Present_Value	X	
Description		
Status_Flags		
Event_State		
Reliability		
Out_Of_Service	X	
Units		
Max_Pres_Value		
Min_Pres_Value		
Priority_Array		
Relinquish_Default	X	
COV_Increment	X	0 .. maxReal
Time_Delay		
Notification_Class		
High_Limit	X	Min_Pres_Value <= x
		<=Max_Pres_Value
		And High_Limit >
		Low_Limit
Low_Limit	X	Min_Pres_Value <= x
		<=Max_Pres_Value
		And High_Limit >
		Low_Limit
Deadband	X	0 .. maxReal
Limit_Enable	X	
Event_Enable	X	
Acked_Transitions		
Notify_Type		
Event_Time_Stamps		

Standard object types description, *continued*

Analog Value

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Present_Value	X	Depends on the Unit
Description		
Status_Flags		
Event_State		
Out_Of_Service	X	
Reliability		
Units		
Priority_Array		
Relinquish_Default	X	
COV_Increment	X	0 .. maxReal
Time_Delay		
Notification_Class		
High_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value And High_Limit > Low_Limit
Low_Limit	X	Min_Pres_Value <= x <=Max_Pres_Value And High_Limit > Low_Limit
Deadband	X	0 .. maxReal
Limit_Enable	X	
Event_Enable	X	
Acked_Transitions		
Notify_Type		
Event_Time_Stamps		

Analog Value (Setpoints)

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	(X)	Depends on the Unit
Units		
Status_Flags		
COV_Increment	X	0 .. maxReal
Out_Of_Service	(X)	
Event_State		

Standard object types description, *continued*

Binary Input

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	(X)	
Status_Flags		
Out_Of_Service	X	
Event_State		
Inactive_Text		
Active_Text		
Polarity	X	
Notification_Class		
Reliability		
Acked_Transitions		
Event_Enable	X	
Alarm_Value	X	
Notify_Type		
Time_Delay		
Event_Time_Stamps		
Elapsed-active-time	X	Only 0
Time-of-active-time-reset		

Binary Output

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	X	
Status_Flags		
Out_Of_Service	X	
Event_State		
Inactive_Text		
Active_Text		
Notification_Class		
Reliability		
Acked_Transitions		
Event_Enable	X	
Notify_Type		
Time_Delay		
Event_Time_Stamps		
Polarity	X	
Feedback_Value		
Priority_Array		
Relinquish_Default	X	
Elapsed-active-time	X	Only 0

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Time-of-active-time-reset		

Standard object types description, *continued*

Binary Value

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	X	
Status_Flags		
Out_Of_Service	X	
Event_State		
Inactive_Text		
Active_Text		
Priority_Array		
Relinquish_Default	X	
Notification_Class		
Reliability		
Acked_Transitions		
Event_Enable	X	
Alarm_Value	X	
Notify_Type		
Time_Delay		
Event_Time_Stamps		
Elapsed-active-time	X	Only 0
Time-of-active-time-reset		

Standard object types description, *continued*

Event-Enrollment

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name	X	
Object_Type		
Event-type	X	
Notify-type	X	
Event-parameters	X	
Object-property-reference	X	
Event-state		
Event-enable	X	
Acked-transitions		
Notification-class	X	
Event-time-stamps		

File

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
File-type		
File-size		
Modification-date		
Archive	X	
Read-only		
File-access-method		

Standard object types description, *continued*

Multistate Input

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	(X)	1 .. Number_Of_States
Number_Of_States		
Status_Flags		
Out_Of_Service	X	
Event_State		
Notification_Class		
Reliability		
Acked_Transitions		
Event_Enable	X	
Alarm_Values	X	Max. 16
Fault_Values	X	Max. 16
Notify_Type		
Time_Delay		
Event_Time_Stamps		
State_Text		

Multistate Output

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	X	1 .. Number_Of_States
Feedback_Value		
Number_Of_States		
Status_Flags		
Out_Of_Service	X	
Event_State		
Priority_Array		
Relinquish_Default	X	1 .. Number_Of_States
Notification_Class		
Reliability		
Acked_Transitions		
Event_Enable	X	
Notify_Type		
Time_Delay		
Event_Time_Stamps		
State_Text		

Standard object types description, *continued*

Multistate Value

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	X	1 .. Number_Of_States
Number_Of_States		
Status_Flags		
Out_Of_Service	X	
Event_State		
Priority_Array		
Relinquish_Default	X	1 .. Number_Of_States
Notification_Class		
Reliability	(X)	
Acked_Transitions		
Event_Enable	X	
Alarm_Values	X	Max. 5
Fault_Values	X	Max. 5
Notify_Type		
Time_Delay		
Event_Time_Stamps		
State_Text		

Multistate Value

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Present_Value	X	1 .. Number_Of_States
Number_Of_States		
Status_Flags		
Out_Of_Service	X	
Event_State		
State_Text		

Standard object types description, *continued*

Notification Class

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier Object_Name Object_Type Description Notification_Class Priority Ack_Required Recipient_List	X X X	Max. 20

Schedule

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier Object_Name Object_Type Description Present_Value Schedule_Default Effective_Period Weekly_Schedule List_Of_Object_Property_References Priority_For_Writing Status_Flags Reliability Out_Of_Service Exception_Schedule	(X) X X X X X X	Multistate, Analog Max. 6 per day 1 ... 16 Only Calendar reference Max. 6 entries for exception day

Standard object types description, *continued*

Trend-log

Properties supported	Writable properties X = Writeable (X) = Writeable if Out_Of_Service=True	Property range restrictions
Object_Identifier		
Object_Name		
Object_Type		
Description		
Enable	X	
Start-time	X	
Stop-time	X	
Log-device-object-property	X	
Log-interval	X	
Client-cov-increment	X	
Stop-when-full	X	
Buffer-size		
Log-buffer		
Record-count	X	
Total-record-count		
Notification-threshold	X	
Records-since-notification		
Last-notify-record		
Event-state		
Notification-class		
Event-enable	X	
Aked-transitions		
Notify§-type		
Event-time-stamps		

2.8 Segmentation capability

- | | | |
|---|-------------|--------------------------|
| <input checked="" type="checkbox"/> Able to transmit segmented messages | Window size | 4 for IP and 1 for MS/TP |
| <input checked="" type="checkbox"/> Able to receive segmented messages | Window size | 4 for IP and 1 for MS/TP |

2.9 Data Link Layer options

Only one Data Link Layer supported, see 2.2 Product model number.

- 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
- MS/TP slave (Clause 9), baud rate(s) 9600,19200,38400,76800
- Point-To-Point, EIA 232 (Clause 10), baud rate(s)
- Point-To-Point, modem, (Clause 10), baud rate(s)
- LonTalk, (Clause 11), medium
- Other :

2.10 Device address binding

Is static device binding supported? Yes No

2.11 Networking options

- Router, Clause 6 (remote management functionality/BACnet PTP)
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD) ¹⁾
Number of BDT entries: 10
Does the BBMD support registrations by foreign devices? Yes No

¹⁾ if product supports IP

2.12 Character sets supported

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

- | | | |
|---|---|--|
| <input type="checkbox"/> ANSI X3.4 | <input type="checkbox"/> IBM / Microsoft DBCS | <input checked="" type="checkbox"/> ISO 8859-1 ¹⁾ |
| <input checked="" type="checkbox"/> ISO 10646 (UCS-2) | <input type="checkbox"/> ISO 10646 (UCS-4) | <input type="checkbox"/> JIS C 6226 |

Index

A

Alarm and event management	8
Analog Input	10
Analog Output.....	11
Analog Value	12

B

Bacnet interoperability building blocks (Annex K) ..	8
BACnet standardized device profile (Annex L).....	7
Before you start	5
Binary Input	13
Binary Output.....	13
Binary Value	14

C

Calendar.....	15
Character sets supported	22
Copyright.....	5

D

Data Link Layer options	21
Data sharing	8
Device	15
Device address binding.....	21
Device management.....	8

E

Event-Enrollment	16
------------------------	----

F

File	16
------------	----

M

Multistate Input.....	17
Multistate Output	17
Multistate Value	18

N

Network management	8
Networking options.....	21
Notification Class.....	19

P

Product description.....	7
Product model number	7

Q

Quality assurance.....	6
------------------------	---

R

Reference documents.....	5
Revision history.....	5

S

Schedule	19
Scheduling	8
Segmentation capability.....	21
Standard object types description	10
Standard object types supported.....	9

T

Trademark.....	5
Trending.....	8
Trend-log.....	20

Siemens Switzerland Ltd.
Building Technologies Group
International Headquarters
Gubelstrasse 22
CH-6301 Zug
Tel. +41 41-724 24 24
Fax +41 41-724 35 22
www.siemens.com/sbt

© 2008 Siemens Switzerland Ltd.
Subject to change