

neuberger.

manual

BIBBs und PICS Fa. Neuberger



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1 BACnet Conformance Class

Ab der Ausgabe 2001 BACnet-Norm ASHRAE 135 werden Klassifizierung der BACnet-Geräte nicht mehr Conformance Classes verwendet, sondern BACnet Interoperability Building Blocks (BIBBs).

Durch Zusammenfassen einzelner BIBBs werden funktionale Eigenschaften der einzelnen BACnet-Geräte beschrieben (siehe Kapitel 3).

2 Protocol Implementation Conformance Statement (PICS)

2.1 BACnet / GLT ProGrafNT

An dieser Stelle ist die PICS-Liste (BACnet/GLT ProGrafNT), wie sie in der BACnet-Norm ASHRAE 135-2004 definiert ist, mit den von Neuberger Gebäudeautomation realisierten BACnet-Eigenschaften aufgeführt.

BACnet Protocol Implementation Conformance Statement

Date: 12.08.2002
Vendor Name: Neuberger
Product Name: ProGrafNT
Product Model Number:
Applications Software Version: ab ProGrafNT V4.6
Firmware Revision:
BACnet Protocol Revision: 135-2004

Product Description: Gebäudeleitssystem ProGrafNT

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)

List of all BACnet Interoperability Building Blocks Supported (Annex K):

GLT		
	supported service	
Data Sharing	Read-Property	DS-RP-A
	Read-Property-Multiple	DS-RPM-A
	Write-Property	DS-WP-A
	Write-Property-Multiple	DS-WPM-A
	Subscribe-COV Confirmed-COV-Notification Unconfirmed-COV-Notification	DS-COV-A
Alarm & Event Management	Confirmed-Event-Notification Unconfirmed-Event-Notification	AE-N-A
	Acknowledge Alarm	AE-ACK-A
	Get Alarm Summary	AE-ASUM-A
Scheduling	Schedule	SCHEM-A
Device & Network Management	Dynamic Device Binding	DM-DDB-A
	Dynamic Communication Control	DM-DCC-A
	Dynamic Time Synchronization	DM-TS-A
	List Manipulation	DM-LM-A
	Reinitialize Device	DM-RD-A

Standard Object Types Supported:

Object Type	Supported
Accumulator	<input type="checkbox"/>
Analog Input	<input checked="" type="checkbox"/>
Analog Output	<input checked="" type="checkbox"/>
Analog Value	<input checked="" type="checkbox"/>
Averaging	<input type="checkbox"/>
Binary Input	<input checked="" type="checkbox"/>
Binary Output	<input checked="" type="checkbox"/>
Binary Value	<input checked="" type="checkbox"/>
Calendar	<input type="checkbox"/>
Command	<input type="checkbox"/>
Device	<input checked="" type="checkbox"/>
Event Enrollment	<input type="checkbox"/>
File	<input type="checkbox"/>
Group	<input type="checkbox"/>
Life Safety Point	<input type="checkbox"/>
Life Safety Zone	<input type="checkbox"/>
Group	<input type="checkbox"/>
Loop	<input type="checkbox"/>
Multistate Input	<input checked="" type="checkbox"/>
Multistate Output	<input checked="" type="checkbox"/>
Multistate Value	<input checked="" type="checkbox"/>
Notification Class	<input checked="" type="checkbox"/>
Program	<input type="checkbox"/>
Pulse Converter	<input type="checkbox"/>
Schedule	<input checked="" type="checkbox"/>
Trendlog	<input type="checkbox"/>

Segmentation Capability:

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

Data Link Layer Options:

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

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

2.2 BACnet / DDC PMC

An dieser Stelle ist die PICS-Liste (BACnet/DDC PMC), wie sie in der BACnet-Norm ASHRAE 135-2004 definiert ist, mit den von Neuberger Gebäudeautomation realisierten BACnet-Eigenschaften aufgeführt.

BACnet Protocol Implementation Conformance Statement

Date: 18.09.2007
Vendor Name: Neuberger
Product Name: PMC (BACnet)
Product Model Number:
Applications Software Version: 2
Firmware Revision: ab V5.1
BACnet Protocol Revision: 135-2004

Product Description: BACnet-PMC Building Controller

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)

List of all BACnet Interoperability Building Blocks Supported (Annex K):

PMC BACnet Building Controller		
	supported service	
Data Sharing	Read-Property	DS-RP-A,B
	Read-Property-Multiple	DS-RPM-A,B
	Write-Property	DS-WP-A,B
	Write-Property-Multiple	DS-WPM-A,B
	Subscribe-COV Confirmed-COV-Notification Unconfirmed-COV-Notification	DS-COV-A,B
	Unconfirmed-COV-Notification (unsolicited)	DS-COVU-A,B
Alarm & Event Management	Confirmed-Event-Notification Unconfirmed-Event-Notification	AE-N-I-B
	Acknowledge Alarm	AE-ACK-B
	Get Event Information	AE-INFO-B
	Get Alarm Summary	AE-ASUM-B
	Get Enrollment Summary	AE-ESUM-B
Scheduling	Schedule internal	SCHED-I-B
	Schedule external	SCHED-E-B
Trending	Viewing and Modifying internal	T-VMT-I-B
	Automated Trend Retrieval	T-ATR-B
Device & Network Management	Dynamic Device Binding	DM-DDB-A,B
	Device Object Binding	DM-DOB-A,B
	Dynamic Communication Control	DM-DCC-B
	Dynamic Time Synchronization	DM-TS-B or DM-UTC-B
	List Manipulation	DM-LM-B
	Reinitialize Device	DM-RD-B
	Backup and Restore	DM-BR-B
	Connection Establishment	NM-CE-A

Standard Object Types Supported:

Object Type	Supported
Accumulator	<input type="checkbox"/>
Analog Input	<input checked="" type="checkbox"/>
Analog Output	<input checked="" type="checkbox"/>
Analog Value	<input checked="" type="checkbox"/>
Averaging	<input type="checkbox"/>
Binary Input	<input checked="" type="checkbox"/>
Binary Output	<input checked="" type="checkbox"/>
Binary Value	<input checked="" type="checkbox"/>
Calendar	<input checked="" type="checkbox"/>
Command	<input type="checkbox"/>
Device	<input checked="" type="checkbox"/>
Event Enrollment	<input type="checkbox"/>
File	<input checked="" type="checkbox"/>
Group	<input type="checkbox"/>
Life Safety Point	<input type="checkbox"/>
Life Safety Zone	<input type="checkbox"/>
Group	<input type="checkbox"/>
Loop	<input checked="" type="checkbox"/>
Multistate Input	<input checked="" type="checkbox"/>
Multistate Output	<input checked="" type="checkbox"/>
Multistate Value	<input checked="" type="checkbox"/>
Notification Class	<input checked="" type="checkbox"/>
Program	<input type="checkbox"/>
Pulse Converter	<input type="checkbox"/>
Schedule	<input checked="" type="checkbox"/>
Trendlog	<input checked="" type="checkbox"/>

Im Anhang A sind die verfügbaren Eigenschaften der einzelnen Objekte aufgelistet.

Segmentation Capability:

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

Data Link Layer Options:

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

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

3 Übersicht BACnet Interoperability Building Blocks (BIBBs) der Fa. Neuberger

Die BACnet-Kommunikation der Leitzentrale mit den BACnet-Automationsstationen beinhaltet folgende BACnet-Dienste, die als sogenannte **BACnet Interoperability Building Blocks (BIBBs)** beschrieben sind:

Die BIBBs sind mit Hilfe von A- und B-Geräten beschrieben. Diese Geräte sind Teilnehmer in einem BACnet-Netzwerk. Gerät A wird als Nutzer (Client, Ziel) und Gerät B als Provider (Server, Datenquelle, Unterstützer, Anbieter) dieser Daten/Dienste bezeichnet.

Die folgende Tabelle gibt gemäß BACnet-Norm ASHRAE 135-2004 Annex L die Klassifizierung der BACnet-Geräte in 6 verschiedene BACnet-Profile wieder.

Erklärung: **fett gedruckt** → von Neuberger realisierte BIBBs

	GLT ProGrafNT	PMC				
	B-OWS	B-BC	B-AAC	B-ASC	B-SA	B-SS
Data Sharing	DS-RP-A,B	DS-RP-A,B	DS-RP-B	DS-RP-B	DS-RP-B	DS-RP-B
	DS-RPM-A	DS-RPM-A,B	DS-RPM-B	DS-WP-B	DS-WP-B	
	DS-WP-A	DS-WP-A,B	DS-WP-B			
	DS-WPM-A	DS-WPM-B	DS-WPM-B			
		DS-COVU-A,B				
Alarm & Event	AE-N-A	AE-N-B	AE-N-B			
Mgmt	AE-ACK-A	AE-ACK-B	AE-ACK-B			
	AE-INFO-A	AE-INFO-B	AE-INFO-B			
	AE-ESUM-A	AE-ESUM-B				
Scheduling	SCHED-A	SCHED-E-B	SCHED-I-B			
Trending	T-VMT-A	T-VMT-I-B				
	T-ATR-A	T-ATR-B				
Device & Network Mgmt	DM-DDB-A,B	DM-DDB-A,B	DM-DDB-B	DM-DDB-B		
	DM-DOB-A,B	DM-DOB-A,B	DM-DOB-B	DM-DOB-B		
	DM-DCC-A	DM-DCC-B	DM-DCC-B	DM-DCC-B		
	DM-TS-A	DM-TS-B or DM-UTC-B	DM-TS-B or DM-UTC-B			
	DM-UTC-A					
	DM-RD-A	DM-RD-B	DM-RD-B			
	DM-BR-A	DM-BR-B				
	NM-CE-A	NM-CE-A				

zusätzlich zum Profil unterstützte BIBBs :

	DS-COV-A	DS-COV-A,B				
	AE-ASUM-A	AE-ASUM-B				
		SCHED-I-B				
	DM-LM-A	DM-LM-B				

4 Anhang A: Liste der verfügbaren PMC-Objekt-Eigenschaften

Object	Available Property	Writable
analog-input	object-identifier	
	object-name	
	object-type	
	present-value	
	description	
	device-type	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	units	
	min-pres-value	
	max-pres-value	
	resolution	
	COV-increment	W
	time-delay	W
	notification-class	
	high-limit	W
	low-limit	W
	deadband	W
	limit-enable	W
	event-enable	W
	acked-transitions	
notify-type		
event-time-stamps		

Object	Available Property	Writable
analog-output	object-identifier	
	object-name	
	object-type	
	present-value	W
	description	
	device-type	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	units	
	min-pres-value	
	max-pres-value	
	resolution	
	priority-array	
	relinquish-default	
	COV-increment	W
	time-delay	W
	notification-class	
	high-limit	W
	low-limit	W
	deadband	W
	limit-enable	W
event-enable	W	
acked-transitions		
notify-type		
event-time-stamps		

Object	Available Property	Writable
analog-value	object-identifier	
	object-name	
	object-type	
	present-value	W
	description	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	units	
	priority-array	
	relinquish-default	
	COV-increment	W
	time-delay	W
	notification-class	
	high-limit	W
	low-limit	W
	deadband	W
	limit-enable	W
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
binary-input	object-identifier	
	object-name	
	object-type	
	present-value	
	description	
	device-type	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	polarity	
	inactive-text	
	active-text	
	time-delay	W
	notification-class	
	alarm-value	
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
binary-output	object-identifier	
	object-name	
	object-type	
	present-value	W
	description	
	device-type	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	polarity	
	inactive-text	
	active-text	
	priority-array	
	relinquish-default	
	time-delay	W
	notification-class	
	feedback-value	
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
binary-value	object-identifier	
	object-name	
	object-type	
	present-value	W
	description	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	inactive-text	
	active-text	
	priority-array	
	relinquish-default	
	time-delay	W
	notification-class	
	alarm-value	
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
calendar	object-identifier	
	object-name	
	object-type	
	description	
	present-value	
	date-list	W

Object	Available Property	Writable
device	object-identifier	
	object-name	W
	object-type	
	system-status	
	vendor-name	
	vendor-identifier	
	model-name	
	firmware-revision	
	application-software-version	
	location	
	description	
	protocol-version	
	protocol-revision	
	protocol-services-supported	
	protocol-object-types-supported	
	object-list:	
	max-APDU-length-accepted	
	segmentation-supported	
	max-segments-accepted	
	local-time	W
	local-date	W
	utc-offset	
	daylight-savings-status	
	apdu-segment-timeout	
	apdu-timeout	
	number-of-APDU-retries	
	device-address-binding	
	database-revision	
	configuration-files	
	last-restore-time	
	backup-failure-timeout	W
active-cov-subscriptions		

Object	Available Property	Writable
file	object-identifier	
	object-name	
	object-type	
	archive	W
	description	
	file-access-method	
	file-size	
	file-type	
	modification-date	
	read-only	

Object	Available Property	Writable
loop	object-identifier	
	object-name	
	object-type	
	present-value	
	description	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	update-interval	
	output-units	
	manipulated-variable-reference	
	controlled-variable-reference	
	controlled-variable-value	
	controlled-variable-units	
	setpoint-reference	
	setpoint	
	action	
	proportional-constant	
	proportional-constant-units	
	integral-constant	
	integral-constant-units	
	derivative-constant	
	derivative-constant-units	
	bias	
	maximum-output	
	minimum-output	
	priority-for-writing	
	COV-increment	W
	time-delay	W
	notification-class	
	error-limit	
	event-enable	
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
multi-state-input	object-identifier	
	object-name	
	object-type	
	present-value	
	description	
	device-type	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	number-of-states	W
	state-text	W
	time-delay	W
	notification-class	
	alarm-values	
	fault-values	
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
multi-state-output	object-identifier	
	object-name	
	object-type	
	present-value	W
	description	
	device-type	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	number-of-states	W
	state-text	W
	priority-array	
	relinquish-default	
	time-delay	W
	notification-class	
	feedback-value	
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
multi-state-value	object-identifier	
	object-name	
	object-type	
	present-value	W
	description	
	status-flags	
	event-state	
	reliability	
	out-of-service	W
	number-of-states	W
	state-text	W
	priority-array	
	relinquish-default	
	time-delay	W
	notification-class	
	alarm-values	
	fault-values	
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

Object	Available Property	Writable
notification-class	object-identifier	
	object-name	
	object-type	
	description	
	notification-class	
	priority	
	ack-required	
	recipient-list	W

Object	Available Property	Writable
schedule	object-identifier	
	object-name	
	object-type	
	present-value	
	description	
	effective-period	W
	weekly-schedule:	W
	exception-schedule:	W
	schedule-default	
	list-of-object-property-references	
	priority-for-writing	
	status-flags	
	reliability	
	out-of-service	W

Object	Available Property	Writable
trend-log	object-identifier	
	object-name	
	object-type	
	description	
	log-enable	W
	start-time	W
	stop-time	W
	log-device-object-property	
	log-interval	W
	stop-when-full	
	buffer-size	W
	log-buffer	
	record-count	W
	total-record-count	
	notification-threshold	W
	records-since-notification	
	last-notify-record	
	event-state	
	notification-class	
	event-enable	W
	acked-transitions	
	notify-type	
	event-time-stamps	

