

**Protocol Implementation Conformance Statement  
For  
BACnet Gateway Application (KC015)**

**Version: 2.1**

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## 1 Introduction

### 1.1 Product Description

The KONE Connection 015 (KC015) delivers a BACnet gateway solution that integrates KONE Elevators and Escalators with BACnet building management systems (BMS). The KC015 is designed around the BACnet PR18 Elevator and Escalator object standard, allowing for quick device discovery and optimized object integration with BACnet PR18-compliant systems. The KC015 combines integrators, simplified installation and diagnostics with minimal configuration for compliant building management systems.

### 1.2 Purpose and Scope

Purpose of this document is to provide protocol implementation conformance statement i.e. PICS for BACnet Gateway application (KC015). Scope of this document is limited to PICS of KONE KIC only.

### 1.3 Abbreviations / Terms

Abbreviation	Description
APDU	Application Protocol Data Unit
B/IP or B-IP	BACnet over Internet Protocol
BBMD	BACnet Broadcast Management Device
COV	Change Of Value
FD	Foreign Device
IP	Internet Protocol
ISO	International Organization for Standardization
PICS	Protocol Implementation Conformance Statement

**Table 1: Abbreviations**

## 2 BACnet Gateway Application PICS

### 2.1 Product Information

<b>Vendor Name</b>	<b>KONE Corporation</b>
<b>Product Name</b>	<b>KONE Connect 015</b>
<b>Product Model Number</b>	<b>KC015</b>
<b>Application Software Version</b>	<b>1.0.0.6</b>
<b>Firmware Revision</b>	<b>1.0.22.0</b>
<b>BACnet Protocol Revision</b>	<b>18</b>

### 2.2 BACnet Standardized Device Profile (Annex L)

BACnet device profile supported by BACnet Gateway application is mentioned below.

▫ BACnet Application Specific Controller (B-ASC)

### 2.3 BACnet Interoperability Building Blocks Supported (Annex K)

BACnet BIBBs supported by BACnet Gateway application are mentioned in below table.

<b>Services</b>	<b>BIBBs Description</b>	<b>BIBBs</b>
	Data Sharing – Read Property –B	DS-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
	Execute Read-Range	T-VMT-I-B
<b>Alarm and Event Management</b>	Alarm and Event – Notification Internal –B	AE-N-I-B
	Alarm and Event – Acknowledge –B	AE-ACK-B
	Alarm and Event – Information –B	AE-INFO-B
<b>Trending</b>	Trending – Automated Trend Retrieval –B	T-ATR-B
	Trending – View and Modify Trends Internal –B	T-VMT-I-B
<b>Device and Network Management</b>	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 – List Manipulation	DM-LM-B

Services	BIBBs Description	BIBBs
	Device Management – Device Communication Control –B	DM-DCC-B
	Device Management – Reinitialize Device –B	DM-RD-B
	Device Management – Object Creation and Deletion –B	DM-OCD-B

Table 2: Supported BIBBs

## 2.4 Standard Object Types Supported

BACnet object types supported in BACnet Gateway application are mentioned in below table.

#	Object Type	Dynamic Creation	Dynamic Deletion
1	Device	×	×
2	Network Port	×	×
3	Notification Class	✓	✓
4	Trend Log	✓	✓
5	Elevator Group	×	×
6	Lift	×	×
7	Escalator	×	×
8	Structured View	×	×

Table 3: Supported Object Types

## 2.5 Standard Object Types Description

Object properties supported in respective object types are mentioned in this section.

Details of abbreviations/codes used in “Conformance Code” column are as mentioned below:

- “R” means “Required”
- “O” means “Optional”

Some optional properties are required for specific BACnet services or functionalities. For details, refer BACnet standard.

Details of abbreviations/codes used in “Access Type” column are as mentioned below:

- “W” means “Writable”
- “R” means “Read-Only”
- “W/C” means “Conditionally Writable”
- “C” means “Commandable”

If not stated otherwise, the following statements apply to all supported BACnet object types:

- No additional conditionally writable properties (other than the ones required by this standard) are supported
- No proprietary properties are implemented

### 2.5.1 Device

Device object properties supported in BACnet gateway application are mentioned in below table.

#	Property Type	Conformance Code	Access Type
1	Object-Identifier	R	R
2	Object-Name	R	R
3	Object-Type	R	R
4	System-Status	R	R
5	Vendor-Name	R	R
6	Vendor-Identifier	R	R
7	Model-Name	R	R
8	Firmware-Revision	R	R
9	Application-Software-Version	R	R
10	Protocol-Version	R	R
11	Protocol-Revision	R	R
12	Protocol-Services-Supported	R	R
13	Protocol-Object-Types-Supported	R	R
14	Object-List	R	R
15	Max-APDU-Length-Accepted	R	R
16	Segmentation-Supported	R	R
17	APDU-Timeout	R	W
18	Number-Of-APDU-Retries	R	W
19	Device-Address-Binding	R	R
20	Database-Revision	R	R
21	Max-Segments-Accepted	O	R
22	Apdu-Segment-Timeout	O	W
23	Local-Date	O	R
24	Local-Time	O	R
25	Structured Object List	O	R

#	Property Type	Conformance Code	Access Type
26	Location	O	R
27	Description	O	R
28	Profile-Name	O	R
29	Property-List	R	R
30	Serial-Number	O	R

Table 4: Device Object Properties

### 2.5.2 Network Port

Network Port object properties supported in BACnet gateway application are mentioned in below table.

#	Property Type	Conformance Code	Access Type
1	Object-Identifier	R	R
2	Object-Name	R	R
3	Object-Type	R	R
4	Description	O	R
5	Status-Flags	R	R
6	Reliability	R	R
7	Out-Of-Service	R	R
8	Network-Type	R	R
9	Protocol-Level	R	R
10	Network-Number	R	R
11	Network-Number-Quality	R	R
12	Changes-Pending	R	R
13	Mac-Address	O	R
14	APDU-Length	R	R
15	Link-Speed	R	R
16	BACnet-IP-Mode	O	R
17	IP-Address	O	R
18	BACnet-IP-UDP-Port	O	R
19	IP-Subnet-Mask	O	R

#	Property Type	Conformance Code	Access Type
20	IP-Default-Gateway	O	R
21	IP-DNS-Server	O	R
22	BBMD-Broadcast-Distribution-Table	O	W
23	BBMD-Accept-FD-Registrations	O	W
24	BBMD-Foreign-Device-Table	O	R
25	FD-BBMD-Address	O	W
26	FD-Subscription-Lifetime	O	W
27	Property-List	R	R
28	Profile-Name	O	R

**Table 5: Network Port Object Properties**

### 2.5.3 Notification Class

Notification-Class object properties supported in BACnet gateway application are mentioned in below table.

#	Property Type	Conformance Code	Access Type
1	Object Identifier	R	R
2	Object-Name	R	R
3	Object-Type	R	R
4	Notification-Class	R	R
5	Priority	R	R
6	Ack-Required	R	W
7	Recipient-List	R	W
8	Description	O	R
9	Profile-Name	O	R
10	Property-List	R	R

**Table 6: Notification Class Object Properties**

### 2.5.4 Trend Log

Trend-Log object properties supported in BACnet gateway application are mentioned in below table.



#	Property Type	Conformance Code	Access Type
1	Object-Identifier	R	R
2	Object-Name	R	R
3	Object-Type	R	R
4	Status-Flags	R	R
5	Event-State	R	R
6	Logging-Type	R	W
7	Total-Record-Count	R	R
8	Record-Count	W	W
9	Log-Buffer	R	R
10	Buffer-Size	R	R
11	Stop-When-Full	R	W
12	Enable	W	W
13	Acked-Transitions	O	R
14	Notification-Class	O	W
15	Description	O	R
16	Event-Enable	O	W
17	Notify-Type	O	R
18	Reliability	O	R
19	Client-COV-Increment	O	W
20	Event-Time-Stamps	O	R
21	Log-Device-Object-Property	O	W
22	Log-Interval	O	W
23	Notification-Threshold	O	W
24	Records-Since-Notification	O	R
25	Start-Time	O	W
26	Stop-Time	O	W
27	Profile-Name	O	R

#	Property Type	Conformance Code	Access Type
28	Last-Notify-Record	O	R
29	Event-Message-Texts	O	R
30	Event-Message-Texts-Config	O	R
31	Event-Detection-Enable	O	W
32	Event-Algorithm-Inhibit	O	W
33	Reliability-Evaluation-Inhibit	O	W
34	Property-List	R	R

Table 7: Trend Log Object Properties

### 2.5.5 Elevator Group

Elevator Group object properties supported in BACnet gateway application are mentioned in below table.

#	Property Type	Conformance Code	Access Type
1	Object-Identifier	R	R
2	Object-Name	R	R
3	Object-Type	R	R
4	Description	O	R
5	Machine-Room-Id	R	R
6	Group-ID	R	R
7	Group-Members	R	R
8	Group-Mode	O	R
9	Landing-Calls	O	R
10	Property-List	R	R
11	Profile-Name	O	R

Table 8: Elevator Group Object Properties

### 2.5.6 Lift

Lift object properties supported in BACnet gateway application are mentioned in below table.

#	Property Type	Conformance Code	Access Type
1	Object-Identifier	R	R
2	Object-Name	R	R

#	Property Type	Conformance Code	Access Type
3	Object-Type	R	R
4	Description	O	R
5	Status-Flags	R	R
6	Elevator-Group	R	R
7	Group-ID	R	R
8	Installation-ID	R	R
9	Floor-Text	O	R
10	Assigned-Landing-Calls	O	R
11	Making-Car-Call	O	W
12	Registered-Car-Call	O	R
13	Car-Position	R	R
14	Car-Moving-Direction	R	R
15	Car-Assigned-Direction	O	R
16	Car-Door-Status	R	R
17	Car-Mode	O	R
18	Car-Load	O	R
19	Car-Load-Units	O	R
20	Next-Stopping-Floor	O	R
21	Passenger-Alarm	R	R
22	Time-Delay	O	R
23	Time-Delay-Normal	O	R
24	Reliability	O	R
25	Out-Of-Service	R	R
26	Car-Drive-Status	O	R
27	Fault-Signals	R	R
28	Landing-Door-Status	O	R
29	Event-Detection-Enable	O	W

#	Property Type	Conformance Code	Access Type
30	Notification-Class	O	W
31	Event-Enable	O	W
32	Acked-Transitions	O	R
33	Notify-Type	O	R
34	Event-Time-Stamps	O	R
35	Event-Message-Texts	O	R
36	Event-Message-Texts-Config	O	R
37	Event-State	O	R
38	Reliability-Evaluation-Inhibit	O	W
39	Event-Algorithm-Inhibit	O	W
40	Profile-Name	O	R
41	Property-List	R	R

Table 9: Lift Object Properties

### 2.5.7 Escalator

Escalator object properties supported in BACnet gateway application are mentioned in below table.

#	Property Type	Conformance Code	Access Type
1	Object-Identifier	R	R
2	Object-Name	R	R
3	Object-Type	R	R
4	Description	O	R
5	Status-Flags	R	R
6	Elevator-Group	R	R
7	Group-ID	R	R
8	Installation-ID	R	R
9	Power-Mode	O	R
10	Operation-Direction	R	R
11	Escalator-Mode	O	R
12	Reliability	O	R

#	Property Type	Conformance Code	Access Type
13	Out-Of-Service	R	R
14	Fault-Signals	O	R
15	Passenger-Alarm	R	R
16	Time-Delay	O	R
17	Time-Delay-Normal	O	R
18	Event-Detection-Enable	O	W
19	Notification-Class	O	W
20	Event-Enable	O	W
21	Acked-Transitions	O	R
22	Notify-Type	O	R
23	Event-Time-Stamps	O	R
24	Event-Message-Texts	O	R
25	Event-Message-Texts-Config	O	R
26	Event-State	O	R
27	Reliability-Evaluation-Inhibit	O	W
28	Event-Algorithm-Inhibit	O	W
29	Property-List	R	R
30	Profile-Name	O	R

Table 10: Escalator Object Properties

### 2.5.8 Structured View

Structured View object properties supported in BACnet gateway application are mentioned in below table.

#	Property Type	Conformance Code	Access Type
1	Object-Identifier	R	R
2	Object-Name	R	R
3	Object-Type	R	R
4	Description	O	R
5	Node-Type	R	R

#	Property Type	Conformance Code	Access Type
6	Node-Subtype	O	R
7	Subordinate-List	R	R
8	Subordinate-Annotations	O	R
9	Property-List	R	R
10	Profile-Name	O	R

Table 11: Structured View Object Properties

## 2.6 Segmentation Capability

Segmentation capabilities of BACnet Gateway application are mentioned below.

- Able to transmit segmented messages      Window Size: 1
- Able to receive segmented messages      Window Size: 1

## 2.7 Data Link Layer Options

BACnet data link layer options supported BACnet Gateway application are mentioned below.

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), BACnet Broadcast Management Device (BBMD)
- BACnet IP, (Annex J), Foreign Device
- BACnet IP, (Annex J), Network Address Translation (NAT Traversal)
- ISO 8802-3, Ethernet (Clause 7)
- ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ATA 878.1, EIA-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)
- Lon Talk, (Clause 11), medium
- BACnet /Zigbee (Annex O)
- BACnet IPv6, (Annex U)
- BACnet IPv6, (Annex U), BACnet Broadcast Management Device (BBMD)
- Other

## 2.8 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

## 2.9 Networking Options

Networking options supported by BACnet Gateway application are mentioned below.

- o Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
- o Annex H, BACnet Tunneling Router over IP.

## 2.10 Character Sets Supported

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

- p ANSI X3.4 i.e. ISO 10646 (UTF-8)
- o JIS X 0208
- o IBM™/Microsoft™ DBCS
- o ISO 10646 (UCS-4)
- o ISO 10646 (UCS-2)
- o ISO 8859-1

## 2.11 Gateway Options

This product is a communication gateway that supports below non-BACnet equipments,

- p LCE series of elevators from KONE
- p OVT 501 series of escalators from KONE

These equipments are mapped as BACnet Lift and Escalator objects, in KONE's KIC BACnet gateway. This product does not use virtual BACnet devices.

## 2.12 Network Security Options

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

- p Non-secure Device - is capable of operating without BACnet Network Security
- o Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
- o Multiple Application-Specific Keys
- o Supports encryption (NS-ED BIBB)
- o Key Server (NS-KS BIBB)