

Clarification Request

References: ASHRAE 135.1-2025, ASHRAE 135-2024, Test Package 26.1.

Date of BTL-WG Response: August 20, 2026

Background:

As per ANSI/ASHRAE Standard 135-2024 Clause 15.9.1.3.1, following is the list of 'Error Class' and 'Error Code' defined for the WriteProperty Service.

15.9.1.3.1 Error Type

This parameter consists of two component parameters: (1) an 'Error Class' and (2) an 'Error Code'. See Clause 18. The 'Error Class' and 'Error Code' to be returned for specific situations are as follows:

<u>Situation</u>	<u>Error Class</u>	<u>Error Code</u>
Specified object does not exist.	OBJECT	UNKNOWN_OBJECT
Specified property does not exist.	PROPERTY	UNKNOWN_PROPERTY
An array index is provided but the property is not an array.	PROPERTY	PROPERTY_IS_NOT_AN_ARRAY
An array index is provided that is greater than the current length of the array.	PROPERTY	INVALID_ARRAY_INDEX
The supplied value would resize the array to a size that is not supported.	PROPERTY	INVALID_ARRAY_SIZE
The specified property is currently not writable by the requestor.	PROPERTY	WRITE_ACCESS_DENIED
The datatype of the value provided is incorrect for the specified property.	PROPERTY	INVALID_DATATYPE
The property is Object_Name and the name is already in use in the device.	PROPERTY	DUPLICATE_NAME
The property is Object Identifier and the identifier is already in use in the device.	PROPERTY	DUPLICATE_OBJECT_ID
The value provided is outside the range of values that the property can take on.	PROPERTY	VALUE_OUT_OF_RANGE
There is not enough space to store the new value.	RESOURCES	NO_SPACE_TO_WRITE_PROPERTY
The data being written has a datatype not supported by the property.	PROPERTY	DATATYPE_NOT_SUPPORTED
The encoding is not valid for the datatype of the property.	PROPERTY	INVALID_DATA_ENCODING
The Priority parameter is not within the defined range of 1..16.	SERVICES	PARAMETER_OUT_OF_RANGE
This condition may be ignored if the property is not commandable.		

Of the Error Codes listed above, the VALUE_OUT_OF_RANGE with Error Class as PROPERTY states:

"The value provided is outside the range of values that the property can take on."

Further, as per BTL Test Plan 26.1, test '135.1-2025 - 7.3.1.37.2 – Verify a Zero Length Object_Name cannot be Written', verifies the behaviour of the IUT when an attempt is made to write a zero-length CharacterString value to the Object_Name property.

For this test, the expected result is a BACnet-Error-PDU with:
Error Class = PROPERTY

Error Code = WRITE_ACCESS_DENIED or VALUE_OUT_OF_RANGE

However, the BACnet standard does not explicitly specify which error code shall be returned when a CharacterString value exceeds the maximum supported length of the property.

Problem:

The requirements for writing a zero-length CharacterString value and a CharacterString value exceeding the maximum supported length appear to represent two different conditions.

For a zero-length Object_Name, BTL Test Plan 26.1 explicitly identifies WRITE_ACCESS_DENIED or VALUE_OUT_OF_RANGE as acceptable error codes.

However, for a CharacterString value that is non-zero length but exceeds the maximum supported length, ANSI/ASHRAE Standard 135-2024 does not explicitly identify the error code that shall be returned.

The definition of VALUE_OUT_OF_RANGE refers to the “range of values that the property can take on,” but does not explicitly state whether the length of a CharacterString is considered part of the range of values for purposes of determining the applicable error code.

Question:

1. For a CharacterString property written with a value exceeding its maximum supported length, which of the defined ‘Error Class’ and ‘Error Code’ combinations for WriteProperty Service shall be returned by the IUT?
2. Should BACnet-Error-PDU with Error Class = PROPERTY and Error Code = VALUE_OUT_OF_RANGE be considered the expected error code when an attempt is made to write a writable CharacterString value exceeding the maximum supported length?

Response:

1. **The standard does not require a specific Error Class or Error Code to be returned in this case. The tests 9.22.2.4 and 9.23.2.7 should not be applied to properties of type Character String.**
2. **No. This is one possible response.**