Date: 09/05/24
Vendor Name: Maco Lighting (1002)
Product Name: zencontrol LCM/RCM/AC
Product Model Number: zencontrol LCM/RCM/AC
Applications Software Version: 2.0 **Firmware Revision:** 2.0.0.13
BACnet Protocol Revision: 12

Product Description:

zencontrol Controller BACnet Inputs
Provides an interface to query information on connected DALI Inputs, and the occupancy state of DALI groups.

BACnet Standardized Device Profile (Annex L)

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

List all BACnet Interoperability Building Blocks supported (see Annex K in BACnet Addendum 135d):

DS-RP-B Read Property
DS-RPM-B Read Property Multiple
DS-WP-B Write Property

DS-COV-B Change Of Value

NM-BBMDC-B BBMD Configuration
NM-FDR-A Foreign Device Registration

Which of the following device binding methods does the product support? (check one or more)

	Send Who-Is, receive I-Am (BIBB DM-DDB-A)
x	Receive Who-Is, send I-Am (BIBB DM-DDB-B)
	Send Who-Has, receive I-Have (BIBB DM-DOB-A)
x	Receive Who-Has, send I-Have (BIBB DM-DOB-B)
	Manual configuration of recipient device's network number and MAC address
	None of the above

Standard Object Types Supported:

Device Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

Description Local_Time Local_Date UTC_Offset Daylight_Saving_Status Active_COV_Subscriptions

4. List of all properties that are writable where not otherwise required by this standard

Object_Identifier Description

5. List of proprietary properties:

Property Identifier	**Property Datatype**	**Meaning**
512	CharacterString	Fitting Number

6. List of any property value range restrictions:

Property Identifier	**Restrictions**

Binary Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

Binary Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

These Binary Value objects support COV subscriptions.

Binary Value instance numbers between 256:271 map to the occupancy state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance number 272 indicates whether any DALI Gear or Devices are missing.
Binary Value instance number 273 indicates whether any DALI Gear are reporting a lamp failure.
Binary Value instance number 274 indicates whether there is a DALI circuit failure.
Binary Value instance number 275 indicates whether the controller is online and functioning normally.

Binary Value instance numbers between 288:303 map to the lamp failure state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance numbers between 304:319 map to the gear failure state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance numbers between 320:335 map to the comms failure state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance numbers between 336:399 map to the lamp failure state of DALI Address 0-63.

Binary Value instance numbers between 400:463 map to the gear failure state of DALI Address 0-63.

Binary Value instance numbers between 464:527 map to the comms failure state of DALI Address 0-63.

To test behaviour of the Binary Value object and its COV, set the Out of Service state to true, and then manually set Present Value as desired.

Binary Output Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

These Binary Output objects support COV subscriptions.

Binary Output instance numbers between 0:127 map to the LED indicators of DALI Momentary Switches present on the DALI bus. This value is writeable.

Binary Output instance numbers between 256:383 map to the LED indicators of DALI Absolute Inputs present on the DALI bus. This value is writeable.

To test behaviour of the Binary Output object and its COV, set the Out of Service state to true, and then manually set Present Value as desired.

Analog Input Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

These Analog Input objects support COV subscriptions.

Analog Input instance numbers between 0:63 represent the Lux levels reported by the Light sensor instances on the DALI bus.

To test behaviour of the Analog Input object and its COV, set the Out of Service state to true, and then manually set Present Value as desired.

Analog Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

Dali Light Level, Dali Scene and Inhibit are all writeable to control the Dali bus.
Controller Profile is writeable to control the operation of the controller.

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

Analog Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

These Analog Value objects support COV subscriptions.

Analog Value instance numbers between 256:271 map to the DALI Light Level state of proprietary object 129 (DALI Occupancy Group) 0-15. This Property is writeable.
Analog Value instance numbers between 272:287 map to the DALI Scene state of proprietary object 129 (DALI Occupancy Group) 0-15. This Property is writeable.
Analog Value instance numbers between 288:303 map to the Inhibit state of proprietary object 129 (DALI Occupancy Group) 0-15. This Property is writeable.
Analog Value instance numbers between 304:319 map to the Minimum Lux Level state of proprietary object 129 (DALI Occupancy Group) 0-15.
Analog Value instance numbers between 320:335 map to the Maximum Lux Level state of proprietary object 129 (DALI Occupancy Group) 0-15.
Analog Value instance numbers between 336:383 map to the System Variable state (0-47) of the controller

Analog Value instance number 1024 is a free running counter that will monotonically increase over time to represent the continued running of the control system.

Analog Value instance number 1025 represents the current Profile of the Controller. Write a Profile number between 0 – 65534 to switch to that profile if it is currently present on the controller. If it is not, no action will be taken.
If a profile is switched to with a non-low priority, write a value of -1 to return the controller to its regularly scheduled profile.

Analog Value instance number 2048:4095 represent the state of any dali 306 multisensors connected to the system. Each dali address has 32 possible instances, therefore, control device address 0, instance 0 is instance number 2048, control device address 1, instance 0 is 2079 etc etc. For more information, see the zencontrol knowledgebase on 306 multisensors

To test behaviour of the Analog Value object and its COV, set the Out of Service state to true, and then manually set Present Value as desired.

MultiState Input Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

These Multistate Input objects support COV subscriptions.

Multistate Input instance numbers between 0:127 map to the DALI Momentary Switches present on the DALI bus.
States:

1. No Input – The Input Switch has not been pressed
2. Short Press A – Input Switch has been short pressed and is latched in state A
3. Short Press B – Input Switch has been short pressed and is latched in state B
4. Long Press A – Input Switch has been long pressed and is latched in state A
5. Long Press B – Input Switch has been long pressed and is latched in state B
6. Stuck – The Input Switch has been pressed for a long period of time and is reporting it is stuck

When short pressing, the Present Value will toggle between Short Press A/B.
When long pressing, the Present Value will toggle between Long Press A/B.
A change

Multistate Input instance numbers between 128:255 map to the DALI PIR Sensors present on the DALI bus.
States:

1. Unoccupied – Sensor has not detected motion in the last 30 seconds
2. Occupied – Sensor has detected motion in the last 30 seconds

Multistate Input instance numbers between 256:383 map to the DALI Absolute Inputs present on the DALI bus.
States:

1. Unknown – Absolute Input is in an unknown state and will be queried.
2. State 1 – Absolute Input is in State 1
3. State 2 – Absolute Input is in State 2

To test behaviour of the Binary Value object and its COV, set the Out of Service state to true, and then manually set

MultiState Input Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

Present Value as desired.

CharacterString Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

CharacterString Value instance numbers between 320:383 map to the Fitting Number of DALI Address 0-63.
CharacterString Value instance numbers between 384:447 map to the GTIN of DALI Address 0-63.
CharacterString Value instance numbers between 448:511 map to the Serial Number of DALI Address 0-63.
CharacterString Value instance numbers between 512:575 map to the OEM GTIN of DALI Address 0-63.
CharacterString Value instance numbers between 575:639 map to the OEM Serial Number of DALI Address 0-63.

Proprietary Object Types Supported:
DALI Occupancy Group Object Type (Identifier 129)

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

Proprietary Object Types Supported:

Property Identifier	Property Datatype	Meaning
513	Boolean	Occupancy State
514	Unsigned	DALI Light Level
515	Unsigned	Current Scene
516	Unsigned	Sensor Inhibit Time
517	Signed	Lux Minimum Value
518	Signed	Lux Maximum Value

5. List of proprietary properties:

Proprietary Object Types Supported:

6. List of any property value range restrictions:

Property Identifier	**Restrictions**
513	0 → Unoccupied, 1 → Occupied
514	0 – 254 → Uniform Level, 255 → Mixed Levels
515	0-15 → Go to scene (writable), 255 → No current scene (unwritable)
516	0 → Disable Inhibit, 1 – 86400 → Inhibit for number of seconds
517,518	-1 → No Lux Data, 0+ → Reported Lux Data

Data Link Layer Options (check all that are supported):

X	BACnet IP, (Annex J)	
X	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):	
	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:	

Networking Options (check all that are supported):

	Router, Clause 6 - List all routing configurations (e.g. ARCNET-Ethernet, Ethernet-MS/TP, etc.):
	Annex H.3, BACnet Tunneling Router over UDP/IP
X	BACnet/IP Broadcast Management Device (BBMD)
X	BBMD supports registrations by Foreign Devices

Segmentation Capability (check all that apply):

		Window Size
	Segmented requests supported	
	Segmented responses supported	

Character Sets Supported (check all that apply):
Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

x	ANSI X3.4
	IBM™/Microsoft™ DBCS
	ISO 8859-1
	ISO 10646 (UCS-2)
	ISO 10646 (ICS-4)
	JIS C 6226

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

N/A

Include any addition information about the product's BACnet capabilities relevant to interoperability:

This controller supports a maximum of 128 simultaneous COV subscriptions.