

Date: February 26, 2016
Vendor Name: LOYTEC electronics GmbH
Product Name: LIOB-5xx/LROC-4xx BACnet I/O module/controller
Product Model Number: LIOB-5xx, LROC-4xx
Applications Software Version: V6
Firmware Revision: 6.0
BACnet Protocol Revision: 135-2012 (1.12)

Product Description:

The range of LIOB-5xx/LROC-4xx devices covers BACnet I/O modules (LIOB-55x) and freely programmable BACnet I/O controllers (LIOB-58x, LROC-4xx) with different I/O configurations. LIOB-5xx devices support up to 200 BACnet server objects, LROC-4xx up to 2000. For visualization, the product implements an embedded OPC XML-DA server. LIOB-5xx/LROC-4xx devices also implement BACnet Schedule, Calendar, Trend Log, and Notification Class objects. Alarming is based on intrinsic reporting. LIOB-5xx/LROC-4xx devices also implement BACnet client functions for simple objects. Device configuration is accomplished by PC software. Controller applications are developed using an IEC-61131/61499 compliant design tool. The product is equipped with a BACnet/IP interface and can act as a BACnet time master.

BACnet Standardized Device Profile (Annex L):

BACnet Building Controller (B-BC)

BACnet Interoperability Building Blocks Supported (Annex K):

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-A (DS-COV-A)
Data Sharing – COV-B (DS-COV-B)
Data Sharing – COVP-A (DS-COVP-A)
Data Sharing – COVP-B (DS-COVP-B)
Data Sharing – COV Unsolicited-B (DS-COVU-B)
Alarm and Event – Notification Internal-B (AE-N-I-B)
Alarm and Event – ACK-B (AE-ACK-B)
Alarm and Event – Alarm Summary-B (AE-ASUM-B)
Alarm and Event – Alarm Enrollment Summary-B (AE-ESUM-B)
Alarm and Event – Alarm Information-B (AE-INFO-B)
Scheduling – Internal-B (SCHED-I-B)
Scheduling – External-B (SCHED-E-B)
Trending – Viewing and Modifying Trends Internal-B (T-VMT-I-B)
Trending – Viewing and Modifying Trends External-B (T-VMT-E-B)
Trending – Automated Trend Retrieval-B (T-ATR-B)
Device Management – DynamicDeviceBinding-A (DM-DDB-A)
Device Management – DynamicDeviceBinding-B (DM-DDB-B)
Device Management – DynamicObjectBinding-B (DM-DOB-B)
Device Management – TimeSynchronization-A (DM-TS-A)
Device Management – TimeSynchronization-B (DM-TS-B)
Device Management – UTCTimeSynchronization-A (DM-UTC-A)
Device Management – UTCTimeSynchronization-B (DM-UTC-B)
Device Management – Automatic Time Synchronization-a (DM-ATS-A)

Device Management – DeviceCommunicationControl-B (DM-DCC-B)
Device Management – ReinitializeDevice-B (DM-RD-B)
Device Management – Backup and Restore (DM-BR-B)
Device Management – List Manipulation-B (DM-LM-B)
Device Management – Restart A (DM-R-A)
Device Management – Restart B (DM-R-B)

Segmentation Capability:

Segmented requests supported, window size: 4
Segmented responses supported, window size: 4

Standard Object Types Supported:

For all the objects below the following apply if not stated otherwise:

- 1) Does not support the CreateObject and DeleteObject service
- 2) Properties Object_Name, Description support up to 64 characters
- 3) Includes the required properties as specified for the object class
- 4) All commandable objects support the Priority_Array and Relinquish_Default with 16 freely usable priorities
- 5) All analog, binary, multi-state objects support COV subscriptions
- 6) No additional writeable properties exist
- 7) No proprietary properties exist
- 8) No range restrictions exist
- 9) Analog, binary, and multi-state objects are limited to 200/2000 objects in total

Device Object

List of optional properties supported:

Location, Description, Max_Segments_Accepted, APDU_Segment_Timeout, Active_COV_Subscriptions, Configuration_Files, Last_Restore_Time, Backup_Failure_Timeout, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, Last_Restart_Reason, Time_Of_Device_Restart, Restart_Notification_Recipients, Time_Synchronization_Recipients, UTC_Time_Synchronization_Recipients, Time_Synchronization_Interval, Align_Intervals, Interval_Offset, Backup_Preparation_Time, Restore_Preparation_Time, Restore_Completion_Time, Backup_And_Restore_State,

Analog Input, Analog Output, Analog Value

Description, Device_Type, Reliability, Min_Pres_Value, Max_Pres_Value, Resolution, COV_Increment, Time_Delay, Notification_Class, Low_Limit, High_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps, Event_Message_Texts

Binary Input, Binary Output, Binary Value

List of optional properties supported (as applies):

Description, Device_Type, Reliability, Active_Text, Inactive_Text, Time_Delay, Change_Of_State_Time, Change_Of_State_Count, Time_Of_State_Count_Reset, Elapsed_Active_Time, Time_of_Active_Time_Reset, Notification_Class, Alarm_Value, Feedback_Value, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps, Event_Message_Texts

Multi-State Input, Multi-state Output, Multi-State Value

List of optional properties supported (as applies):

Description, Device_Type, Reliability, State_Text, Time_Delay, Notification_Class, Alarm_Values, Fault_Values, Feedback_Values, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps, Event_Message_Texts

Large Analog Value, Integer Value, Positive Integer Value

List of optional properties supported (as applies):

Description, Out_Of_Service, Event_State, Reliability, COV_Increment, Time_Delay, Notification_Class, Low_Limit, High_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps, Event_Message_Texts

CharacterString Value, OctetString Value

List of optional properties supported (as applies):

Description, Out_Of_Service, Reliability

Notification Class Object, Schedule Object, Calendar Object

List of optional properties supported (as applies):

Description, Weekly_Schedule, Exception_Schedule

Object limit: 32 Notification Class, 100 Schedule, 25 Calendar objects.

Trend Log Object

List of optional properties supported:

Description, Start_Time, Stop_Time, Log_DeviceObjectProperty, Log_Interval, COV_Resubscription_Interval, Client_COV_Increment, Align_Intervals, Interval_Offset, Trigger, Notification_Threshold, Records_Since_Notification, Last_Notify_Record, Notification_Class, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps, Event_Message_Texts, Reliability

Object limit: 256 Trend Log objects. There is an aggregated limit of 4,000,000 log records over all Trend Log objects.

Accumulator

List of optional properties supported:

Description, Device_Type, Reliability, Value_Change_Time, Value_Before_Change, Value_Set

Pulse Converter

List of optional properties supported:

Description, Reliability, COV_Increment, COV_Period

Loop

List of optional properties supported:

Description, Reliability, COV_Increment

File Object

List of optional properties supported:

Description

Object limit: 1 File object. This object is used for configuration backup and restore.

Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- MS/TP master (Clause 9), baud rate(s): 9600, 19200, 38400, 76800
- 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:

Device Address Binding:

Static device address binding is supported.

Networking Options:

- Router, Clause 6 – MS/TP to BACnet/IP
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
- Registrations by Foreign Devices

Character Sets Supported:

The device is configurable for one of the following character sets at a time. It does not support them simultaneously.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> ANSI X3.4/UTF-8 | <input type="checkbox"/> IBM™/Microsoft™ DBCS | <input checked="" type="checkbox"/> ISO 8859-1 |
| <input checked="" type="checkbox"/> ISO 10646 (UCS-2) | <input type="checkbox"/> ISO 10646 (UCS-4) | <input type="checkbox"/> JIS C 6226 |

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

This product is not a communication gateway.

Additional Information and Contact:

Further Information, a detailed User Manual and firmware updates can be obtained from our website <http://www.loytec.com>.

For information and technical support please contact us at the following address:

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