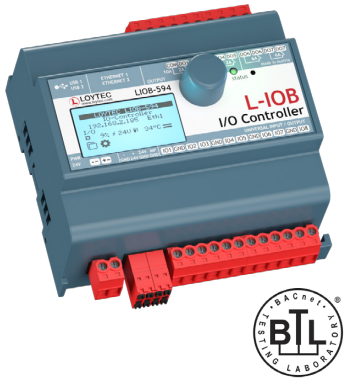
L-IOB I/O Controller

LIOB-594

- ✓ BACnet
- ✓ CEA-709
- KNX
- ✓ Modbus
- ✓ MP-Bus
- ✓ OPC

Datasheet #89080122



LIOB-594 I/O Controllers are IP-enabled, compact, programmable BACnet Building Controller (B-BC) with physical inputs and outputs and integrated graphical visualization.

Communication

LIOB-594 I/O Controllers are equipped with two Ethernet ports including a built-in Ethernet switch. This allows for building a daisy chained line topology of up to 20 devices, which reduces costs for network installation. Dual Ethernet port devices also allow the setup of a redundant Ethernet installation (ring topology), which increases reliability. The redundant Ethernet topology is enabled by the Rapid Spanning Tree Protocol (RSTP), which is supported by most managed switches.

Technology data points are automatically exposed as OPC tags for higher level OPC client applications or L-WEB system via the integrated OPC server providing SSL encrypted web services (OPC XML-DA) or UA Secure Conversation (OPC UA). The L-IOB I/O Controllers further allow data exchange over global connections (network-wide data exchange), offer AST™ functions (Alarming, Scheduling, and Trending), store custom graphic pages for visualization in LWEB-802/803, and can be seamlessly integrated in the LWEB-900 Building Management System. The L-IOB I/O Controllers implement the BACnet Building Controller (B-BC) profile and are BTL certified.

IoT Integration

The IoT function (Node.js) allows connecting the system to almost any cloud service, either for uploading historical data to analytics services, telemetry using MQTT, delivering alarm messages to alarm processing services or operating parts of the control system over a cloud service (e.g., scheduling based on Web calendars or booking systems). Processing Internet information such as weather data in forecast-based control is also possible. Finally, the JavaScript kernel also allows implementing serial protocols to non-standard equipment in primary plant control.

Local Operation and Override

All L-IOB I/O Controllers are equipped with an LCD display (128x64) with backlight and jog dial for manual local operation and override. Device and data point information is displayed in text form and via graphical symbols.

Features

- Automation station with physical inputs and outputs
- Programmable with L-STUDIO IEC 61131-3 and IEC 61499
- 128x64 graphic display with backlight
- Local and remote access to information about device status and data points
- Manual operation using the jog dial or VNC client
- Alarming, Scheduling, and Trending (AST™)
- Node.js support* for easy IoT integration (e.g. Google calendar, MQTT, Alexa & friends, multimedia equipment,…)
- Event-driven e-mail and SMS (requires LTE-800) notification
- Math objects to execute mathematical operations on data points
- Stores customized graphic pages
- Visualization of customized graphic pages through LWEB-900 (Building Management), LWEB-803 (Monitoring and Control), or LWEB-802 (Web Browser)
- Support of the L-STAT Room Operator Panel
- Built-in OPC XML-DA and OPC UA server
- Dual Ethernet/IP interface
- Access to network statistics
- Compliant with ANSI/ASHRAE 135-2012 and ISO 16484-5:2012 standard

*requires L-IOT1 software license

LIOB-594

- Supports BACnet MS/TP and BACnet/IP
- BACnet Client Function (Write Property, Read Property, COV Subscription)
- BACnet Client Configuration with configuration tool (scan and EDE import)
- B-BC (BACnet Building Controller) functionality, BTL certified
- Compliant with CEA-709, CEA-852, and ISO/IEC 14908 Standard (LonMark System)
- Supports IP-852 (Ethernet/ IP)
- Support of dynamically created or static NVs
- Support of user-defined NVs (UNVTs) and Configuration Properties (SCPTs, UCPTs)
- Integrated BACnet/IP to MS/TP Router including BBMD and slave proxy
- Gateway functions including Smart Auto-Connect™
- Integrated web server for device configuration and monitoring data points
- Stores user-defined project documentation
- Connection to EnOcean wireless devices via LENO-80x Interface
- Supports WLAN through LWLAN-800 Interface
- Supports LTE through LTE-800 Interface
- Integration of damper actuator via MP-Bus
- Support VPN

General Specifications	
Type	**LIOB-594**
Dimensions (mm)	107 x 100 x 75 (L x W x H), DIM076
Installation	DIN rail mounting following DIN 43880, top hat rail EN 50022
Purpose of control	Operating control
Construction of control	Independently mounted control
Feature of automatic action	Type 1
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals), pollution degree 2
Power supply	24 V DC/ V AC SELV ±10 % via LPOW-2415B, or with an external power supply
Rated Impulse Voltage	2500 V
Program cycle time	Down to 10 ms
Interface	2 x Ethernet (100Base-T): Web services (OPC XML-DA, OPC UA), LonMark IP-852, BACnet/IP**, Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, VNC, SNMP, VPN 2 x USB-A: WLAN (needs LWLAN-800), EnOcean (needs LENO-80x), LTE (needs LTE-800) 1 x RS-485 (ANSI TIA/EIA-485): BACnet MS/TP** or Modbus RTU (Master or Slave) or L-STAT (Room Operator Panels) 1 x MP-Bus *** Router between BACnet/IP and BACnet MS/TP*

Specifications	
Type	**LIOB-594**
Power consumption	4.5 W
Universal I/O (IO)	8
Digital Output (DO)	7 (5x Relay 2A, 2x Relay 6A)
Digital Output specification	Please refer to the "General Input and Output Specification of LOYTEC devices" for more details.

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Resource limits			
Total number of data points	10 000	LonMark Calendars	1 (25 calendar patterns)
OPC data points	5 000	LonMark Schedulers	10
BACnet objects	500 (analog, binary, multi-state)	LonMark Alarm Servers	1
BACnet client mappings	500	E-mail templates	50
BACnet calendar objects	25	Math objects	50
BACnet scheduler objects	10 (64 data points per object)	Alarm logs	10
BACnet notification classes	32	Modbus data points	300
Trend logs (BACnet or generic)	256 (13 000 000 entries, ≈ 200 MB)	Connections (Local / Global)	500 / 100
Total trended data points	256	Number of L-WEB clients	32 (simultaneously)
CEA-709 network variables (NVs)	500	L-STAT Room Operator Panels	8
CEA-709 Alias NVs	500	EnOcean devices	10
CEA-709 External NVs (polling)	500	EnOcean data points	100
CEA-709 address table entries	256 (non-ECS mode: 15)	MP-Bus devices (per channel)	8 (16 MPL)

Runtime licenses	
Type	**LIOB-594**
Programming, Tools	L-STUDIO software (IEC 61131-3 or IEC 61499), L-INX Configurator
License	L-STUDIO: included L-LOGICAD: n/a

Order number	Product description
LIOB-594	L-IOB I/O Controller: 8 x Universal I/O (IO), 7 DO (5x Relay 2A, 2x Relay 6A)
L-ACT101-MP	Actuator 5/8", 5 Nm, 45in-lb, MP-Bus cable
L-ACT102-MP	Actuator 3/4", 5 Nm, 45in-lb, MP-Bus cable
LPOW-2415B	Power supply unit with power connector 24 V DC, 15 W
L-IOT1	Add-on Software License to enable IoT functionality on LIOB-585/586/587/588/589/59x, LIOB-AIR, and LINX-102/103/202/203
L-TEMP2	External temperature sensor (NTC10K) for use with L-IOB Universal Inputs
LENO-800	EnOcean Interface 868 MHz Europe
LENO-801	EnOcean Interface 902 MHz USA/Canada
LENO-802	EnOcean Interface 928 MHz Japan
LWLAN-800	Wireless LAN Interface IEEE 802.11bgn
LTE-800	LTE Interface
LSTAT-800-G3-Lx	Room Operator Panel, black front, white enclosure, Modbus, NFC, temperature, rel. humidity, ext. switch/NTC, IR receiver, Buttons (Lx)
LSTAT-801-G3-Lx	Room Operator Panel, front black, white enclosure, Modbus, NFC, temperature, rel. humidity, ext. switch/NTC, occupancy, IR receiver, Buttons (Lx)
LSTAT-802-G3-Lx	Room Operator Panel, front black, white enclosure, Modbus, NFC, temperature, rel. humidity, ext. switch/NTC, occupancy, IR receiver, CO2, Buttons (Lx)
LSTAT-800-G3-L20x	Room Operator Panel, white front, white enclosure, Modbus, NFC, temperature, rel. humidity, ext. switch/NTC, IR receiver, Buttons (Lx)
LSTAT-801-G3-L20x	Room Operator Panel, white front, white enclosure, Modbus, NFC, temperature, rel. humidity, ext. switch/NTC, occupancy, IR receiver, Buttons (Lx)
LSTAT-802-G3-L20x	Room Operator Panel, white front, white enclosure, Modbus, NFC, temperature, rel. humidity, ext. switch/NTC, occupancy, IR receiver, CO2, Buttons (Lx)
LSTAT-80x-CUSTOM	One-time customization cost for L-STAT custom design, including 2 working samples

Dimensions of the devices in mm and [inch]

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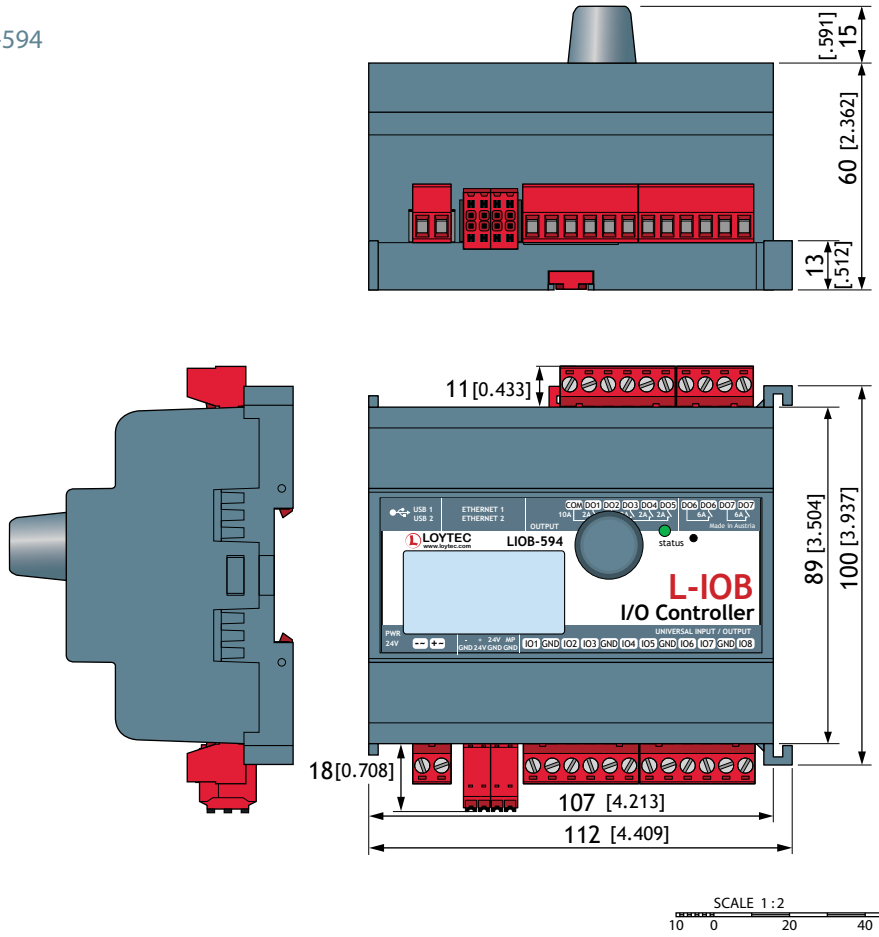

SCALE 1 : 2

10 0 20 40 60 80 100 mm