

LIOB-590 I/O Controllers are IP-enabled, compact, programmable automation stations for LonMark Systems and BACnet/IP networks with bidirectional I/Os configurable as either input or output and integrated graphical visualization.

BACnet/IP over Ethernet

The LIOB-590 I/O Controller is 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. LIOB-590 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, 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 bidirectional I/Os configurable as either input or output
- Programmable with L-STUDIO (IEC 61131-3 or IEC 61499)
- Programmable with L-LOGICAD (IEC 61131-3, requires L-LOGICAD-LIOB software license)
- Node.js support* for easy IoT integration (e.g. Google calendar, Alexa & friends, multimedia equipment,...)
- Dual Ethernet/IP interface
- Manual operation using the jog dial or VNC client
- 128x64 graphic display with backlight
- Local and remote access to information about device status and data points
- Visualization of customized graphical pages through LWEB-900 (Building Management), LWEB-803 (Monitoring and Control), or LWEB-802 (Web Browser)
- Integrated web server for device configuration and monitoring data points
- Gateway functions including Smart Auto-Connect™
- Access to network statistics
- Compliant with CEA-709, CEA-852, and ISO/IEC 14908 Standard (LonMark System)
- Compliant with ANSI/ASHRAE 135-2012 and ISO 16484-5:2012 standard
- Supports BACnet/ IP
- B-BC (BACnet Building Controller) functionality, BTL certified
- BACnet Client Function (Write Property, Read Property, COV Subscription)
- BACnet Client Configuration with configuration tool (scan and EDE import)
- Supports IP-852 (Ethernet/ IP)

*requires L-IOT1 software license

- Support of dynamically created or static NVs
- Support of user-defined NVs (UNVTs) and Configuration Properties (SCPTs, UCPTs)
- Alarming, Scheduling, and Trending (AST™)
- Event-driven e-mail notification
- Math objects to execute mathematical operations on data points
- 20 x Universal I/O (IO)
- Built-in OPC XML-DA and OPC UA server
- Stores customized graphical pages
- Stores user-defined project documentation

General Specifications

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|----------------------|---|
| Dimensions (mm) | 107 x 100 x 75 (L x W x H), DIM063 |
| Installation | DIN rail mounting following DIN 43880, top hat rail EN 50022 |
| Operating conditions | 0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals) |
| Power supply | 24 VDC / 24 VAC ±10 % |
| 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 |

Resource limits

| | | | |
|---------------------------------|-----------------------------------|--------------------------------|--------------------------|
| Total number of data points | 10 000 | CEA-709 External NVs (polling) | 500 |
| OPC data points | 5 000 | CEA-709 address table entries | 256 (non-ECS mode: 15) |
| BACnet objects | 500 (analog, binary, multi-state) | LonMark Calendars | 1 (25 calendar patterns) |
| BACnet client mappings | 500 | LonMark Schedulers | 10 |
| BACnet calendar objects | 25 | LonMark Alarm Servers | 1 |
| BACnet scheduler objects | 10 (64 data points per object) | E-mail templates | 50 |
| BACnet notification classes | 32 | Math objects | 50 |
| Trend logs (BACnet or generic) | 256 (4 000 000 entries, ≈ 60 MB) | Alarm logs | 10 |
| Total trended data points | 256 | Modbus data points | 300 |
| CEA-709 network variables (NVs) | 500 | Connections (Local / Global) | 500 / 100 |
| CEA-709 Alias NVs | 500 | Number of L-WEB clients | 32 (simultaneously) |

Runtime licenses

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|--------------------|---|
| Programming, Tools | L-STUDIO software (IEC 61131-3 or IEC 61499), L-LOGICAD, L-INX Configurator |
| License | L-STUDIO: included L-LOGICAD: upgradeable |

Specifications

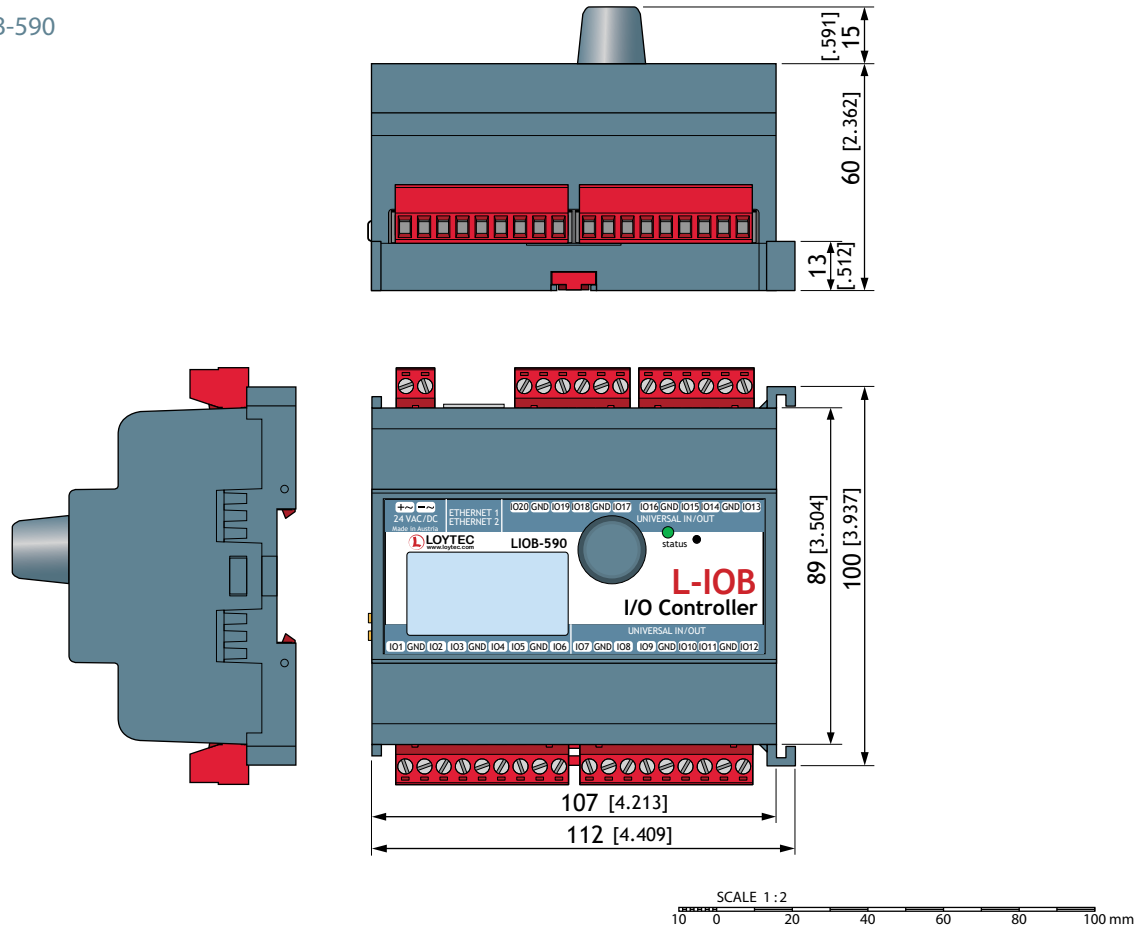
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|--------------------|--|
| Power consumption | 4.5 W |
| Universal I/O (IO) | 20 |
| I/O Specification | Please refer to the " General Input and Output Specification of LOYTEC devices " at the end of the L-IOB section for more details. |

Order number Product description

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|----------------|---|
| LIOB-590 | L-IOB I/O Controller: 20 Universal I/O (IO) |
| L-IOT1 | Add-on Software License to enable IoT functionality on LIOB-585/586/588/589/59x, LIOB-AIR, and LINX-102/103/202/203 |
| L-LOGICAD-LIOB | License to activate the L-LOGICAD runtime (LIOB-59x) |
| LPOW-2415B | Power supply unit with power connector 24 VDC, 15 W |
| L-TEMP2 | External temperature sensor (NTC10K) for use with L-IOB Universal Inputs |
| LRS232-802 | USB to RS232 Interface |

Dimensions of the devices in mm and [inch]

DIM063 LIOB-590



The products of LOYTEC electronics GmbH are subject to constant development. Therefore, LOYTEC reserves the right to modify technical specifications at any time without prior notice. The most recent datasheet can be downloaded from www.loytec.com.