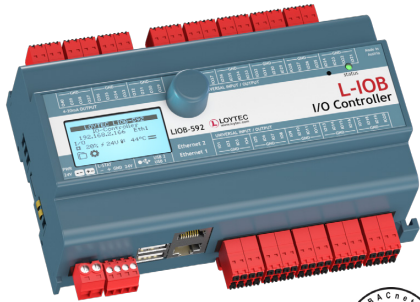


- ✓ BACnet
- ✓ CEA-709
- KNX

- ✓ Modbus
- M-Bus
- ✓ OPC



Datasheet #89084925



LIOB-592 I/O Controllers are IP-enabled, compact, programmable BACnet Building Controller (B-BC) with physical inputs and outputs and integrated graphical visualization.

BACnet/IP over Ethernet

The LIOB-592 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 TSL 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-592 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 bidirectional I/Os configurable as either input or output
- Programmable with L-STUDIO (IEC 61131-3 or IEC 61499)
- Room controller for up to 2 room segments
- Node.js support¹ for easy IoT integration (e.g. Google calendar, MQTT, 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
- Stores customized graphic pages
- Visualization of customized graphic 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 MS/TP, BACnet/IP and BACnet/SC
- B-BC (BACnet Building Controller) functionality, BTL certified
- BACnet Client Function (Write Property, Read Property, COV Subscription)

¹ requires L-IOT1 software license

L-IOB I/O Controller

LIOB-592

- BACnet Client Configuration with configuration tool (scan and EDE import)
- 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 BACnet/SC and BACnet MS/TP Router including BBMD as well as Slave-Proxy functionality
- Alarming, Scheduling, and Trending (AST™)
- Event-driven e-mail and SMS (requires LTE-800) notification
- Math objects to execute mathematical operations on data points
- 40 x Universal I/O (IO) ³
- Built-in OPC XML-DA and OPC UA server
- Connection to EnOcean wireless devices via LENO-80x Interface
- Supports SMI (Standard Motor Interface) through LSMI-804
- Supports WLAN through LWLAN-800 Interface
- Supports MP-Bus through LMPBUS-804
- Supports LTE through LTE-800 Interface
- Supports RS-232 through LRS232-802 Interface
- Support of the L-STAT Room Operator Panel
- Stores user-defined project documentation
- Supports VPN

General Specifications

Type	LIOB-592
Dimensions (mm)	159 x 100 x 75 (L x W x H), 9 DU, DIM074
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 V AC ±10 %
Program cycle time	Down to 10 ms
Interface	<p>2 x Ethernet (100Base-T): Web services (OPC XML-DA, OPC UA), LonMark IP-852, BACnet/ IP, BACnet/SC Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, VNC, SNMP, VPN</p> <p>2 x USB-A: WLAN (needs LWLAN-800), EnOcean (needs LENO-80x), MP-Bus (needs LMPBUS-804), SMI (needs LSMI-804), LTE (needs LTE-800)</p> <p>1 x L-STAT (Room Operator panels) or Modbus RTU (Master or Slave) or BACnet MS/TP</p>
Max. number of Rooms/Segments	2

Specifications

Type	LIOB-592
Power consumption	4.5 W ²
Universal I/O (IO)	40 ³
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.

Runtime licenses

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

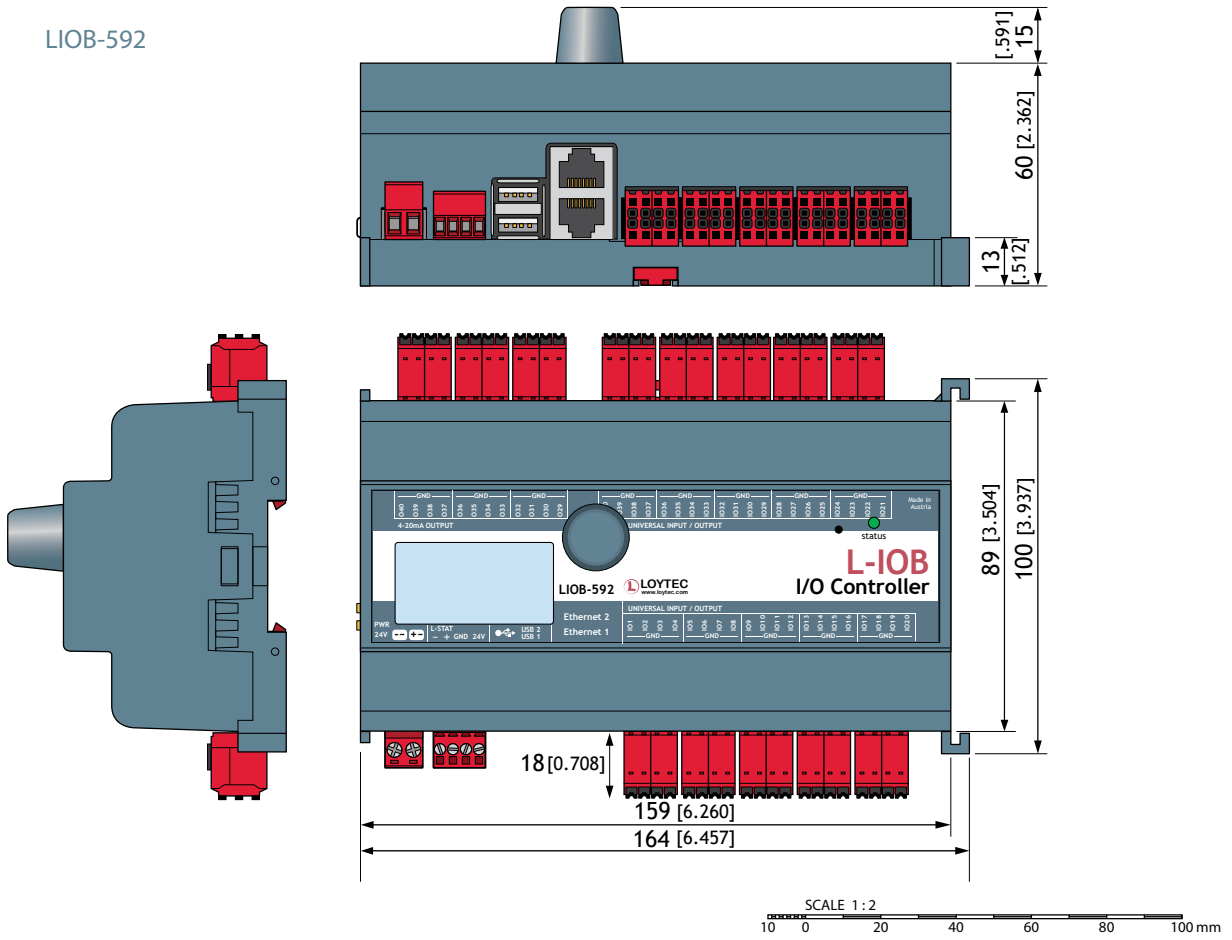
² Add external load: Sum of max. current drawn from all outputs x 24V + power drawn from USB and L-STAT connectors

³ O29-O40 are internally connected to IO29-IO40 and provide 4-20 mA outputs in parallel to the 0-10 V outputs on IO29-IO40.

Resource limits			
Total number of data points	10 000	LonMark Schedulers	10
OPC data points	5 000	LonMark Alarm Servers	1
BACnet objects	500 (analog, binary, multi-state)	E-mail templates	50
BACnet client mappings	500	Math objects	50
BACnet calendar objects	25	Alarm logs	10
BACnet scheduler objects	10 (64 data points per object)	Modbus data points	300
BACnet notification classes	32	Connections (Local / Global)	500 / 100
Trend logs (BACnet or generic)	256 (13 000 000 entries, ≈ 200 MB)	Number of L-WEB clients	32 (simultaneously)
Total trended data points	500	MP-Bus devices	8 (16 MPL)
CEA-709 network variables (NVs)	500	EnOcean devices (maximum)	10
CEA-709 Alias NVs	500	EnOcean data points	10 per EnOcean device
CEA-709 External NVs (polling)	500	L-STAT Network Thermostats	8
CEA-709 address table entries	256 (non-ECS mode: 15)	SMI devices	16
LonMark Calendars	1 (25 calendar patterns)		
Order number	Product description		
LIOB-592	L-IOB I/O Controller: 40 Universal I/O (12 optionally with 4-20 mA Current Output)		
L-STUDIO	Development and integration platform for programmable LOYTEC controllers		
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		
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 802.11 bgn		
LTE-800	LTE Interface		
LRS232-802	USB to 2 x RS-232 Interface		
LMPBUS-804	MP-Bus interface for 16 devices per channel, up to 4 channels		
LSMI-804	Standard Motor Interface for 64 motors, 4 SMI channels via USB		
LSTAT-800-G3-Lx	Room Operator Panel, black front, white enclosure, Modbus, temperature, rel. humidity, ext. switch/NTC, IR receiver, Buttons (Lx)		
LSTAT-801-G3-Lx	Room Operator Panel, front black, white enclosure, Modbus, temperature, rel. humidity, ext. switch/NTC, occupancy, IR receiver, Buttons (Lx)		
LSTAT-802-G3-Lx	Room Operator Panel, front black, white enclosure, Modbus, temperature, rel. humidity, ext. switch/NTC, occupancy, IR receiver, CO2, Buttons (Lx)		
LSTAT-800-G3-L20x	Room Operator Panel, white front, white enclosure, Modbus, temperature, rel. humidity, ext. switch/NTC, IR receiver, Buttons (Lx)		
LSTAT-801-G3-L20x	Room Operator Panel, white front, white enclosure, Modbus, temperature, rel. humidity, ext. switch/NTC, occupancy, IR receiver, Buttons (Lx)		
LSTAT-802-G3-L20x	Room Operator Panel, white front, white enclosure, Modbus, 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		
LPOW-2415A	LIOB-Connect power supply unit, 24 VDC, 15 W		
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		

Dimensions of the devices in mm and [inch]

DIM074 LIOB-592



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.