

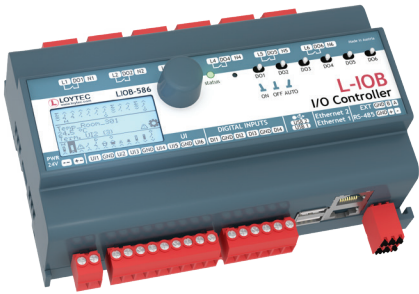
L-IOB I/O Controller

LIOB-586/588/589

Datasheet #89046120



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



The LIOB-586/588/589 I/O Controllers are IP-enabled, compact, programmable automation stations for LonMark Systems and BACnet/IP networks with physical inputs and outputs and integrated graphical visualization.

Communication

The LIOB-586/588/589 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. LIOB-586/588/589 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.

On the LIOB-586 front panel the six relay outputs can be overridden via 3-way switches.

Power measurement

External meters can be integrated via M-Bus or Modbus. The LIOB-586/588/589 I/O Controllers perfectly meet energy management and energy reporting applications.

Features

- Automation station with physical inputs and outputs
- Programmable with L-STUDIO IEC 61131-3 and IEC 61499
- Programmable with L-LOGICAD
- Extension with physical inputs and outputs using one L-IOB I/O Module (LIOB-10x or LIOB-45x/55x)
- 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
- Manual override of each output through switches (LIOB-586 only)
- Alarming, Scheduling, and Trending (AST™)
- Node.js support* for easy IoT integration (e.g. Google calendar, Alexa & friends, multimedia equipment,...)
- Event-driven e-mail notification
- Math objects to execute mathematical operations on data points
- Stores customized graphical pages
- Visualization of customized graphical 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

*requires L-IOT1 software license

LIOB-586/588/589

- Dual Ethernet/IP interface
- Access to network statistics
- Compliant with ANSI/ASHRAE 135-2012 and ISO 16484-5:2012 standard
- 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 BACnet MS/TP Router including BBMD as well as Slave-Proxy functionality
- M-Bus Master according to EN 13757-3, connection via optional M-Bus Converter (L-MBUS20 or L-MBUS80)
- Gateway functions including Smart Auto-Connect™
- Modbus TCP and Modbus RTU/ASCII (Master or Slave)
- Integrated web server for device configuration and monitoring data points
- Connection to EnOcean wireless devices via LENO-80x Interface
- Supports WLAN through LWLAN-800 Interface
- Supports MP-Bus through LMPBUS-804 Interface
- Supports LTE through LTE-800 Interface
- Stores user-defined project documentation

General Specifications

Type	LIOB-586	LIOB-588	LIOB-589
Dimensions (mm)	159 x 100 x 75 (L x W x H), DIM005	159 x 100 x 75 (L x W x H), DIM006	159 x 100 x 75 (L x W x H), DIM007
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 VDC/ 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, and event-triggered		
L-IOB I/O Module	1 L-IOB I/O Module of type LIOB-10x or LIOB-45x/55x		

Interface	2 x Ethernet (100Base-T): Web services (OPC XML-DA, OPC UA), LonMark IP-852, BACnet/IP*, LIOB-IP, Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, VNC, SNMP 1 x LIOB-Connect 2 x USB-A: WLAN (needs LWLAN-800), EnOcean (needs LENO-80x), MP-Bus (needs LMPBUS-804), LTE (needs LTE-800) 1 x EXT: M-Bus, Master EN 13757-3 (needs L-MBUS20 or L-MBUS80) 1 x RS-485 (ANSI TIA/ EIA-485): BACnet MS/ TP*, or Modbus RTU/ASCII (Master or Slave), or L-STAT Room Operator Panels
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* Router between BACnet/IP and BACnet MS/TP

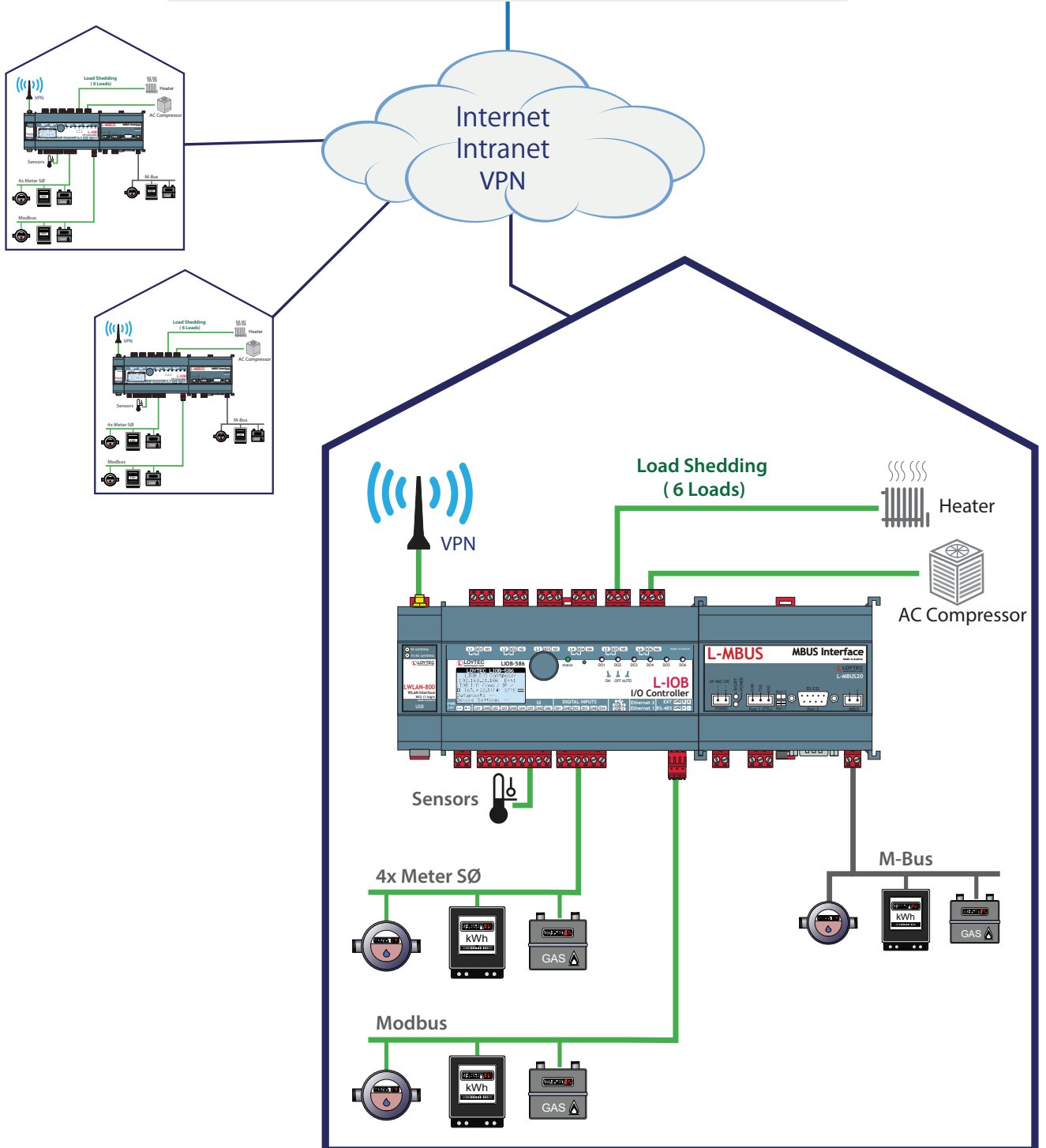
Specifications L-IOB I/O Controller (LIOB-58x)

Type	LIOB-586	LIOB-588	LIOB-589
Power consumption	5.4 W (Relays on)	5.9 W (Relays on)	4.5 W (Relays on)
Universal Input (UI)	6	10	10
Digital Input (DI)	4	-	6
Analog Output (AO)	-	6	6
Digital Output (DO)	6 (6 x Relay 10 A)	8 (8 x Relay 8 A)	4 (4 x Relay 8 A)
Digital Output specification	Please refer to the " General Input and Output Specification of LOYTEC devices " at the end of the L-IOB section for more details.		

L-IOB I/O Controller

LIOB-586/588/589

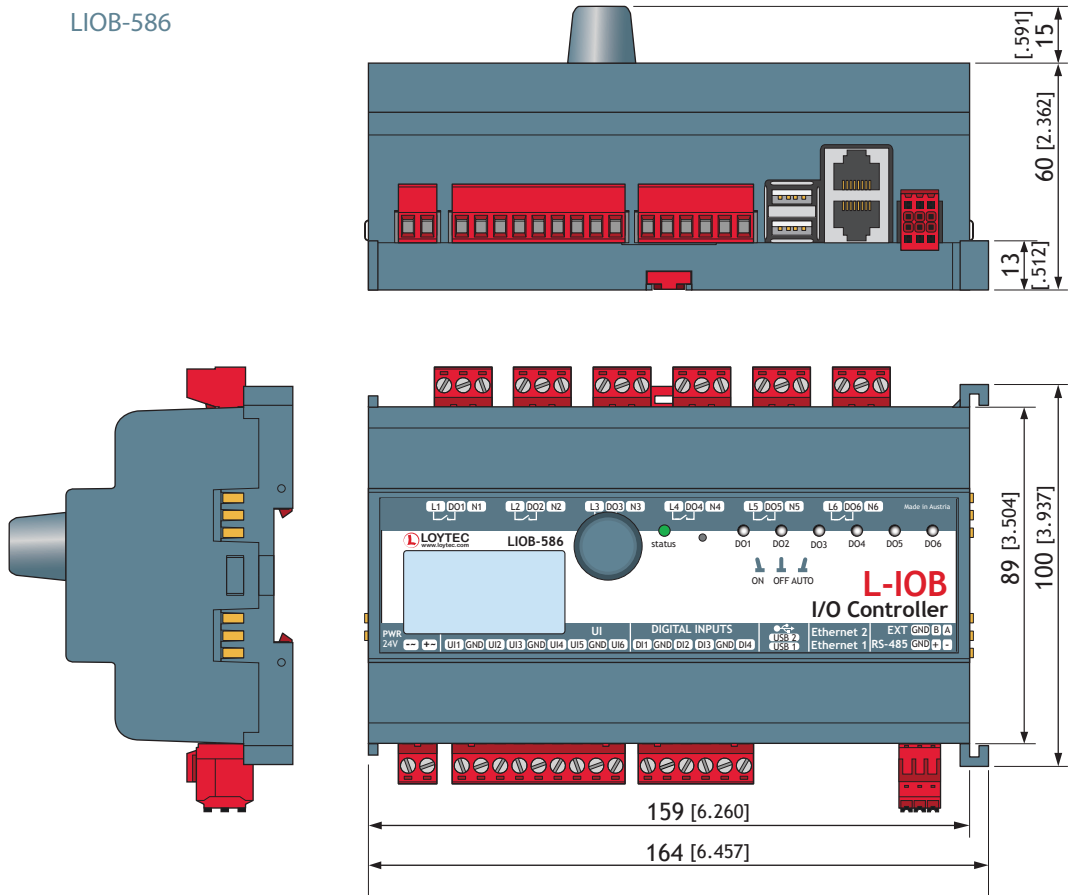
Runtime licenses			
Type	LIOB-586	LIOB-588	LIOB-589
Programming, Tools	L-STUDIO (IEC 61131-3 and IEC 61499 based), L-LOGICAD, L-INX Configurator		
License	L-STUDIO: included L-LOGICAD: included	L-STUDIO: included L-LOGICAD: included	L-STUDIO: included L-LOGICAD: included
Resource limits			
Total number 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)	M-Bus data points	300
BACnet notification classes	32	Modbus data points	300
Trend logs (BACnet or generic)	256 (4 000 000 entries, ≈ 60 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-IOB I/O Modules	1
CEA-709 Alias NVs	500	L-STAT Room Operator Panels	8
CEA-709 External NVs (polling)	500	EnOcean devices	10
CEA-709 address table entries	256 (non-ECS mode: 15)	EnOcean data points	100
LonMark Calendars	1 (25 calendar patterns)	MP-Bus devices (per channel)	8 (16 MPL)
Order number	Product description		
LIOB-586	L-IOB I/O Controller: 6 UI, 4 DI, 6 DO (6 x Relay 10 A)		
LIOB-588	L-IOB I/O Controller: 10 UI, 6 AO, 8 DO (8 x Relay 8 A)		
LIOB-589	L-IOB I/O Controller: 10 UI, 6 AO, 6 DI, 4 DO (4 x Relay 8 A)		
L-IOT1	Add-on Software License to enable IoT functionality on LIOB-585/586/588/589/590, LIOB-AIR, and LINX-102/103/202/203		
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		
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		
LMPBUS-804	MP-Bus interface for 16 devices per channel, up to 4 channels		
L-MBUS20	M-Bus level converter for 20 M-Bus devices		
L-MBUS80	M-Bus level converter for 80 M-Bus devices		
LSTAT-800-G3-Lx	Room Operator Panel, black front, white enclosure, Modbus, NFC, temperature, rel. humidity, ext. switch/NTC, 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	Customized Room Operator Panel, minimum quantity 100 pieces, enclosure G1: silver, G2: black, G3: white; custom print Lx, EnOcean optional, including 2 working samples, typical lead time 10 weeks		



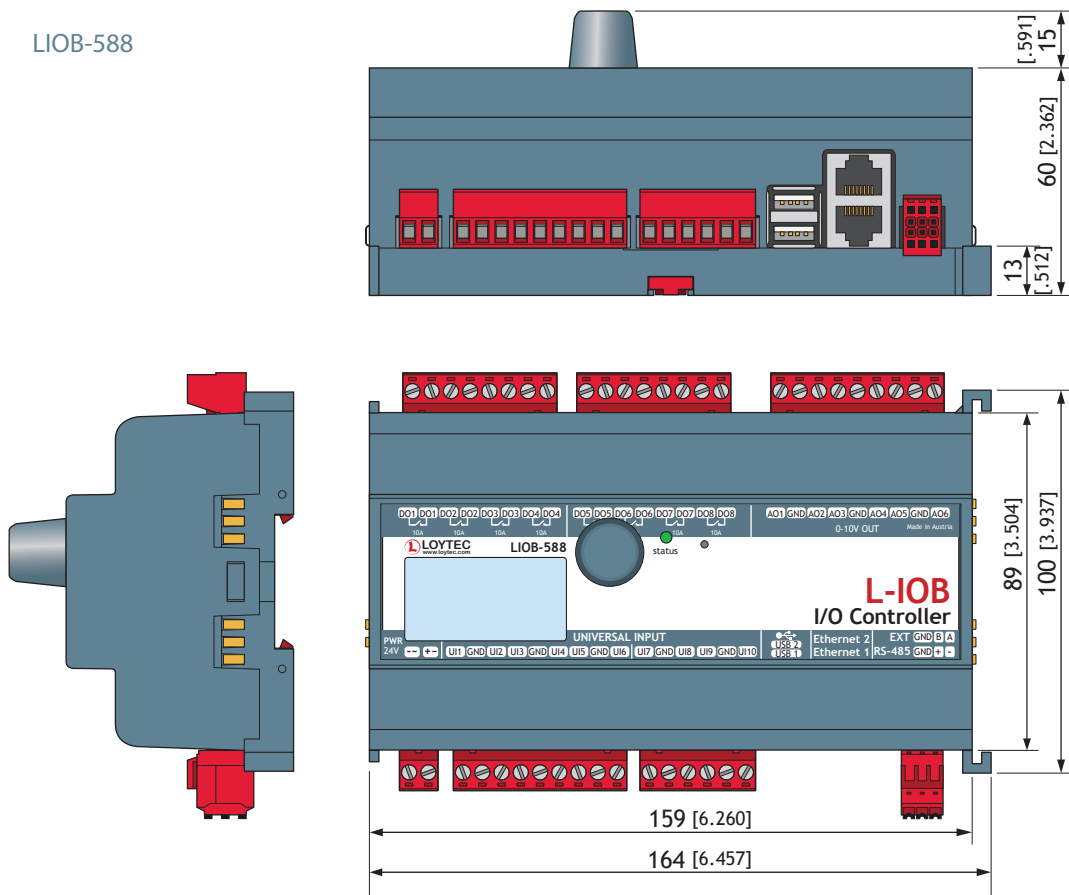
Energy Management with LIOB-586

Dimensions of the devices in mm and [inch]

DIM005 LIOB-586



DIM006 LIOB-588



Dimensions of the devices in mm and [inch]

DIM007

LIOB-589

