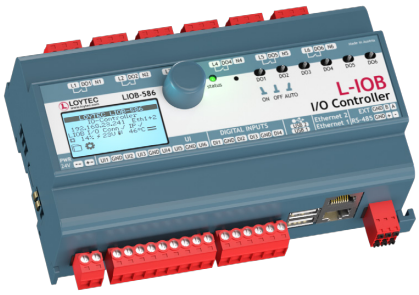
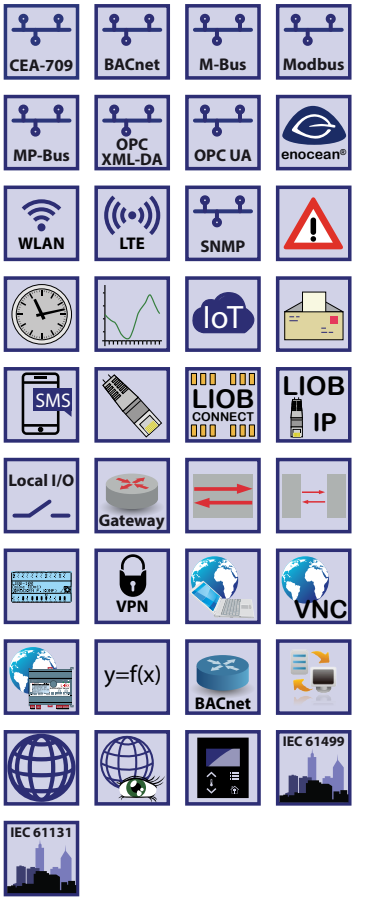
LIOB-586/587/588/589

Datasheet #89046124





LIOB-586/587/588/589 I/O Controllers are IP-enabled, compact, programmable BACnet Building Controller (B-BC) with physical inputs and outputs and integrated graphical visualization.

Communication

The LIOB-586/587/588/589 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 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-586/587/588/589 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, 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. On the LIOB-586/LIOB-587 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-586/587/588/589 I/O Controllers perfectly meet energy management and energy reporting applications. The LIOB-587 includes built-in power measurement.

Features

- Automation station with physical inputs and outputs
- Programmable with L-STUDIO IEC 61131-3 and IEC 61499
- Room controller for up to 2 room segments
- Extension with physical inputs and outputs using one L-IOB I/O Module (LIOB-10x/11x 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 (only LIOB-586, LIOB-587)
- Alarming, Scheduling, and Trending (AST™)
- Node.js support[1] for easy IoT integration (e.g. Google calendar, MQTT, Alexa & friends, multimedia equipment,…)
- Event-driven e-mail 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

[1] requires L-IOT1 software license

L-IOB I/O Controller

LIOB-586/587/588/589

- Access to network statistics
- Compliant with ANSI/ASHRAE 135-2012 and ISO 16484-5:2012 standard
- Supports BACnet MS/TP, BACnet/IP and BACnet/SC
- 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/SC and 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 (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
- Supports RS-232 through LRS232-802 Interface
- Stores user-defined project documentation
- Support VPN

General Specifications				
Type	**LIOB-586**	**LIOB-587**	**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 V DC/ V AC SELV ±10 % via L-POW, 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/11x or LIOB-45x/55x			
Interface	2 x Ethernet (100Base-T): Web services (OPC XML-DA, OPC UA), LonMark IP-852, BACnet/IP*, BACnet/SC*, LIOB-IP, Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, VNC, SNMP, VPN 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 (Master or Slave), or L-STAT Room Operator Panels ** Router between BACnet/IP, BACnet/SC and BACnet MS/TP*			
Max. number of Rooms/Segments	2	2	2	2

Specifications L-IOB I/O Controller (LIOB-58x)				
Type	**LIOB-586**	**LIOB-587**	**LIOB-588**	**LIOB-589**
Power consumption	5.4 W (Relays on)	5.4 W (Relays on)	5.9 W (Relays on)	4.5 W (Relays on)
Universal Input (UI)	6	6	10	10
Digital Input (DI)	4	4	-	6
Analog Output (AO)	-	-	6	6
Digital Output (DO)	6 (6 x Relay 10 A Type2)	6 (6 x Relay 10 A Type2)	8 (8 x Relay 6 A)	4 (4 x Relay 6 A)
Digital Output specification	Please refer to the "General Input and Output Specification of LOYTEC devices" for more details.			

LIOB-586/587/588/589

Runtime licenses				
Type	**LIOB-586**	**LIOB-587**	**LIOB-588**	**LIOB-589**
Programming, Tools	L-STUDIO (IEC 61131-3 and IEC 61499 based), L-INX Configurator			
License	L-STUDIO: included	L-STUDIO: included	L-STUDIO: included	L-STUDIO: included

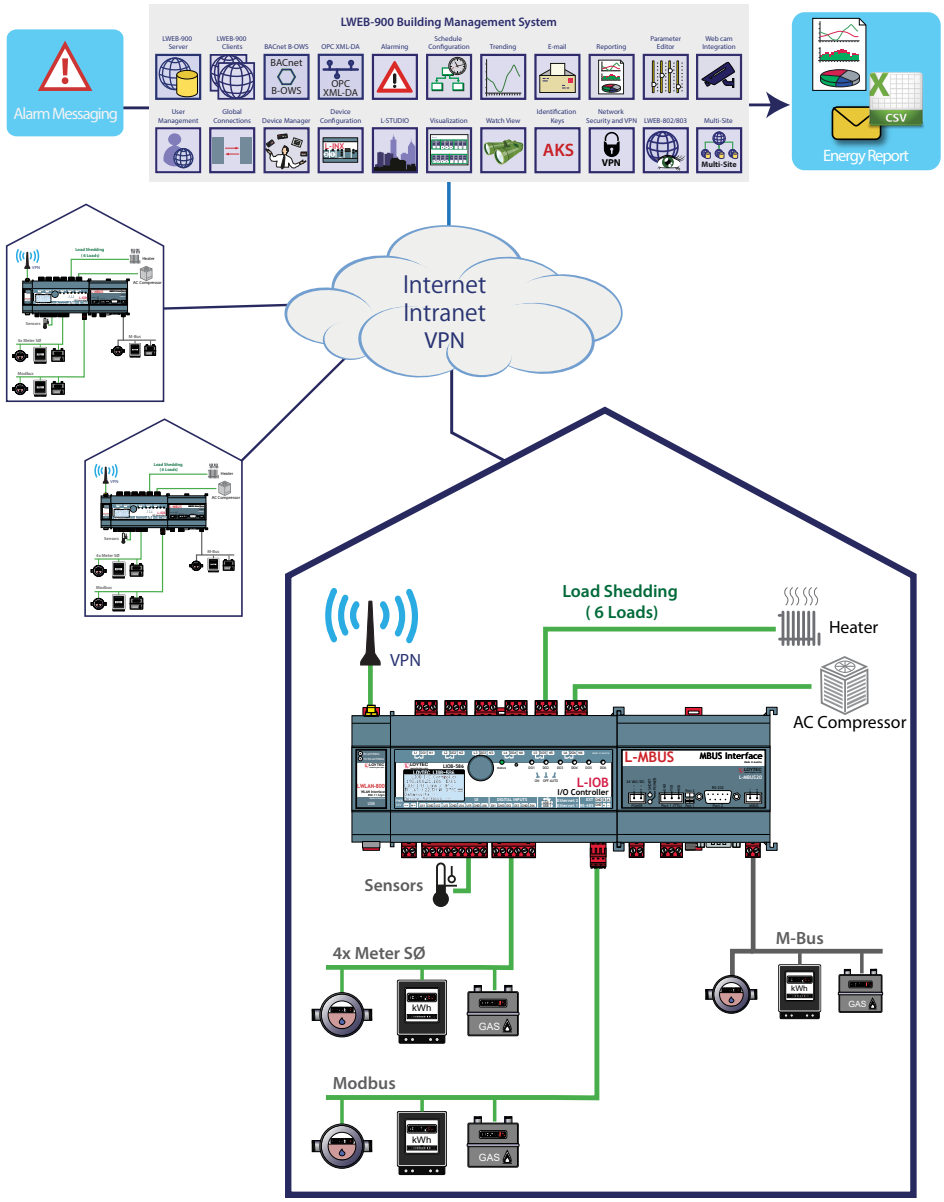
Resource limits			
Total number of data points	10 000	LonMark Schedulers	10
OPC data points	1 000	LonMark Alarm Servers	1
BACnet objects	500 (analog, binary, multi-state)	E-mail templates	50
BACnet client mappings	500	Math objects	50
BACnet calendar objects	25	Alarm logs	10
BACnet scheduler objects	10 (64 data points per object)	M-Bus data points	300
BACnet notification classes	32	Modbus data points	300
Trend logs (BACnet or generic)	256 (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-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 Type2)
LIOB-587	L-IOB I/O Controller: 6 UI, 4 DI, 6 DO (6 x Relay 10 A Type2) with power measurement
LIOB-588	L-IOB I/O Controller: 10 UI, 6 AO, 8 DO (8 x Relay 6 A)
LIOB-589	L-IOB I/O Controller: 10 UI, 6 AO, 6 DI, 4 DO (4 x Relay 6 A)
LIOB-100	LIOB-Connect I/O Module: 8 UI, 2 DI, 2 AO, 9 DO (5 x Relay 6 A, 4 x Triac 0.5 A)
LIOB-101	LIOB-Connect I/O Module: 8 UI, 16 DI
LIOB-102	LIOB-Connect I/O Module: 6 UI, 6 AO, 8 DO (8 x Relay 6 A)
LIOB-103	LIOB-Connect I/O Module: 6 UI, 6 AO, 5 DO (5 x Relay 16 A)
LIOB-110	LIOB-Connect I/O Module: 20 Universal I/O (IO)
LIOB-112	LIOB-Connect I/O Module: 40 Universal I/O (12 optionally with 4-20 mA Current Output)
LIOB-450	LIOB-IP852 I/O Module: 8 UI, 2 DI, 2 AO, 8 DO (4 x Relay 6 A, 4 x Triac 0.5 A)
LIOB-451	LIOB-IP852 I/O Module: 8 UI, 12 DI
LIOB-452	LIOB-IP852 I/O Module: 6 UI, 6 AO, 8 DO (8 x Relay 6 A)
LIOB-453	LIOB-IP852 I/O Module: 6 UI, 6 AO, 5 DO (4 x Relay 16 A, 1 x Relay 6 A)
LIOB-454	LIOB-IP852 I/O Module: 7 UI, 4 AO, 7 DO (5 x Relay 6 A, 2 x Triac 0.5 A), 1 Pressure Sensor
LIOB-550	LIOB-BIP I/O Module: 8 UI, 2 DI, 2 AO, 8 DO (4 x Relay 6 A, 4 x Triac 0.5 A)
LIOB-551	LIOB-BIP I/O Module: 8 UI, 12 DI
LIOB-552	LIOB-BIP I/O Module: 6 UI, 6 AO, 8 DO (8 x Relay 6 A)
LIOB-553	LIOB-BIP I/O Module: 6 UI, 6 AO, 5 DO (4 x Relay 16 A, 1 x Relay 6 A)
LIOB-554	LIOB-BIP I/O Module: 7 UI, 4 AO, 7 DO (5 x Relay 6 A, 2 x Triac 0.5 A), 1 Pressure Sensor
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
LPOW-2415A	LIOB-Connect power supply unit, 24 V DC, 15 W
LPOW-2415B	Power supply unit with power connector 24 V DC, 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
LRS232-802	USB to 2 x RS-232 Interface

L-IOB I/O Controller

LIOB-586/587/588/589

Order number	Product description
LMPBUS-804	MP-Bus interface for 16 devices per channel, up to 4 channels
L-MBUS20	M-Bus Level Converter, Interface for up to 20 M-Bus devices
L-MBUS80	M-Bus Level Converter, Interface for up to 80 M-Bus devices
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



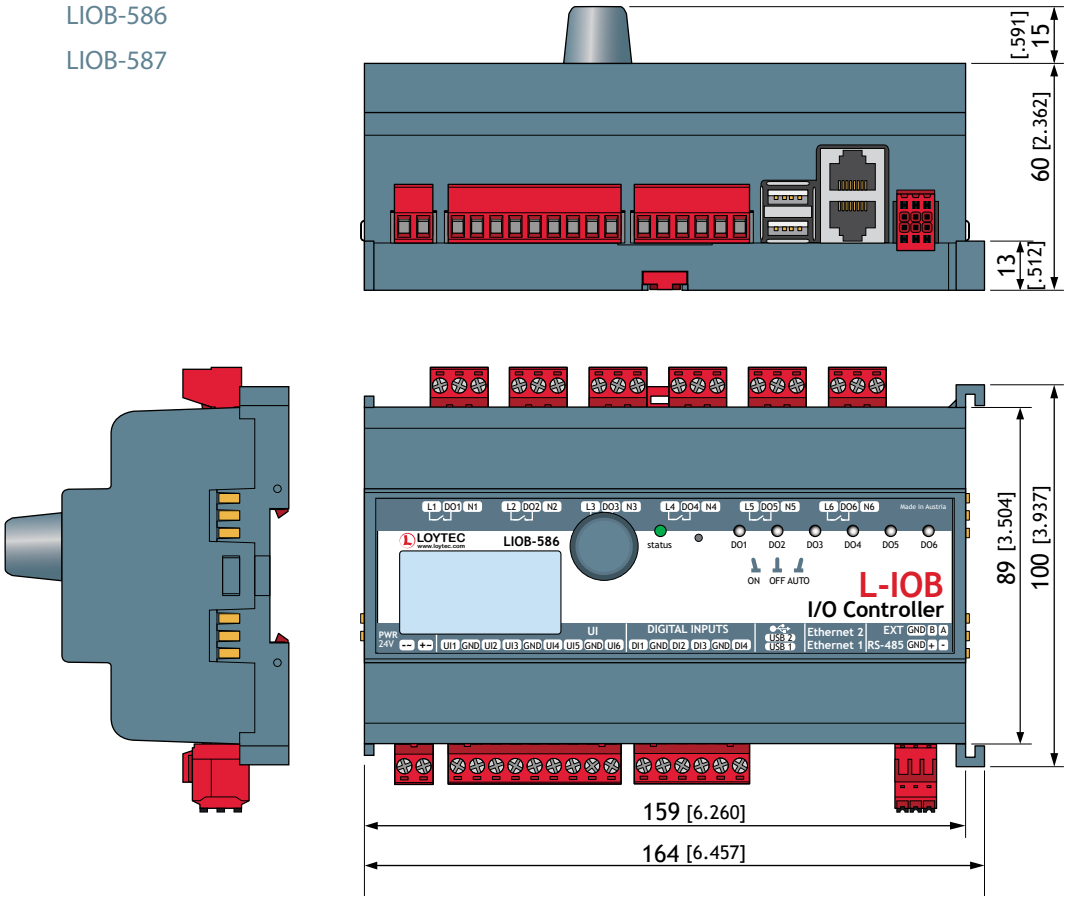
Energy Management with LIOB-586

Dimensions of the devices in mm and [inch]

DIM005

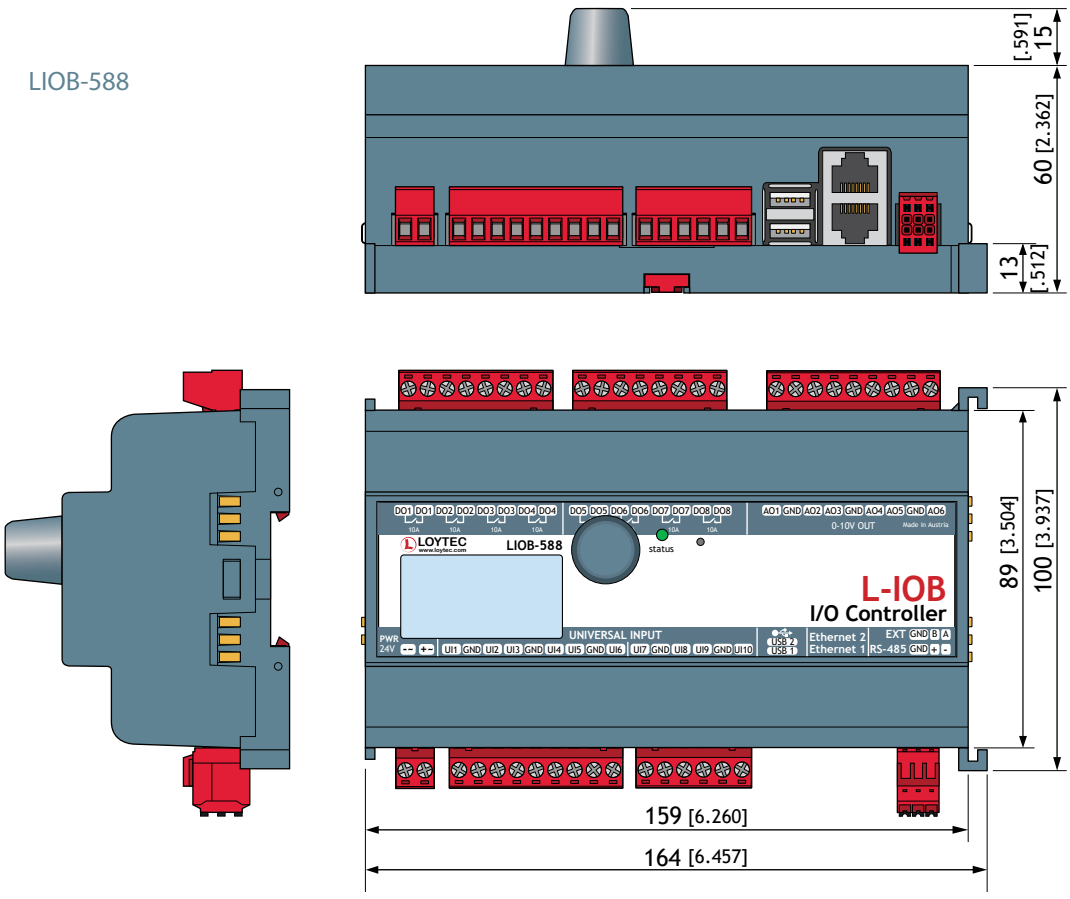
LIOB-586

LIOB-587



DIM006

LIOB-588



SCALE 1 : 2

10 0 20 40 60 80 100 mm

Dimensions of the devices in mm and [inch]

DIM007 LIOB-589