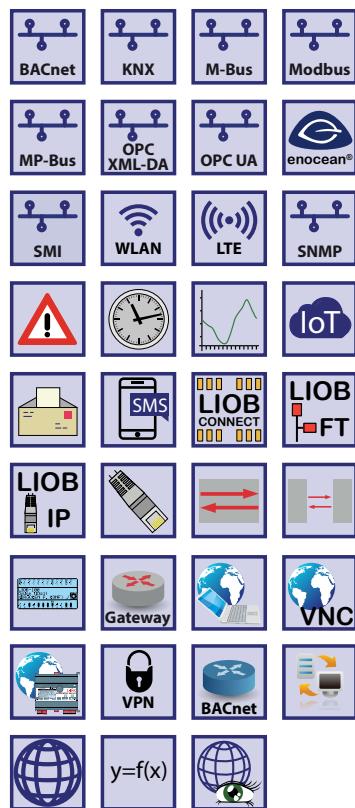
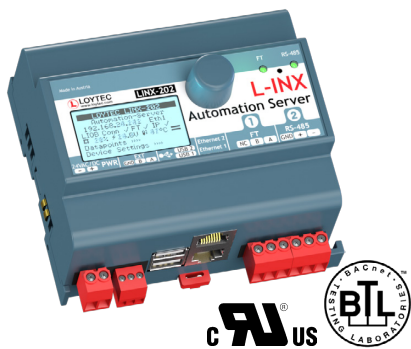


L-INX Automation Server

LINX-202, LINX-203

Datasheet #89035523

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



The L-INX Automation Servers LINX-202 and LINX-203 (successors of LINX-200, LINX-201) can host user specific graphical pages for the visualization of information from BACnet networks via LWEB-900 (Building Management) or LWEB-802/803. They can integrate physical I/Os through L-IOB I/O Modules via LIOB-Connect, LIOB-FT, or LIOB-IP. Local operation and override is provided by the built-in jog dial and the backlit display (128x64 pixels). Device and data point information is shown on the display via symbols and in text format.

BACnet can be integrated via BACnet/IP, BACnet/SC or BACnet MS/TP. In addition, the Automation Servers provide connectivity to concurrently integrate KNX, Modbus, and M-Bus and connect as a gateway data points of different technological origin. Optionally, mathematical objects can be applied within a connection to calculate the data point output values depending on the formula used. Depending on the type, the Automaton Servers feature a BACnet/IP router including BBMD as well as Slave-Proxy functionality (LINX-203). LINX-202 and LINX-203 are BTL certified as B-BC (BACnet Building Controller).

The gateway functionality allows data communication between all communication technologies available on the device. Different technology data points are mapped through Local Connections on the device. The mapping of different technology data points on distributed devices is supported by Global Connections. L-INX Automation Servers also support Smart Auto-Connect™ – the automatic generation of connections to substantially reduce engineering efforts and cost. All technology data points are automatically created as OPC XML-DA and OPC UA data points.

Each L-INX Automation Server is equipped with two Ethernet ports. It can either be configured to use the internal switch to interconnect the two ports or every port is configured to work in a separate IP network.

When the Ethernet ports are configured for two separate IP networks, one port can be connected for instance to a WAN (Wide Area Network) with enabled network security (HTTPS) while the second port can be configured to be connected to an insecure network (LAN) where the standard building automation protocols like BACnet/IP, LON/IP, or Modbus TCP are present. These devices also feature fire-wall functionality of course to isolate particular protocols or services between the ports. The built-in VPN function provides for simple VPN setup and secure access to remote sites. The LTE-800 interface enables wireless access to remote sites through a mobile carrier.

Using the internal switch, a daisy chained line topology of up to 20 devices can be built, which reduces costs for network installation. The IP switch also allows 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.

The L-INX devices provide fully featured AST™ functionality (Alarming, Scheduling, and Trending) and can be integrated perfectly into the L-WEB System.

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.

Features

- Visualization of customized graphical pages through LWEB-900 (Building Management), LWEB-803 (Monitoring and Control), or LWEB-802 (Web Browser)
- Stores customized graphical pages
- Extension with physical inputs and outputs using L-IOB I/O Modules (LIOB-10x, LIOB-15x, and LIOB-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
- 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 notification
- Math objects to execute mathematical operations on data points
- Integrated 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
- Supports BACnet/IP, BACnet/SC or BACnet MS/TP
- 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
- Integrated BACnet/ IP to BACnet/SC and BACnet MS/ TP Router including BBMD as well as Slave-Proxy functionality (LINX-203 only)
- KNXnet/IP, connection to KNX TP1 through LKNX-300 Interface
- M-Bus Master according to EN 13757-3, connection via optional M-Bus Converter (L-MBUS20 or L-MBUS80)
- Modbus TCP and Modbus RTU (Master or Slave)
- Gateway functions including Smart Auto-Connect™
- Integrated web server for device configuration and monitoring data points
- Configurable via Ethernet/IP
- Connection to EnOcean wireless devices via LENO-80x Interface
- Supports SMI (Standard Motor Interface) through LSMI-80x
- Supports WLAN through LWLAN-800 Interface
- Supports LTE through LTE-800 Interface
- Supports MP-Bus through LMPBUS-804 Interface
- Supports RS-232 through LRS232-802 Interface
- Stores user-defined project documentation

Specifications

Dimensions (mm)	107 x 100 x 75 (L x W x H), DIM045	
Installation	DIN rail mounting following DIN 43880, top hat rail EN 50022	
Power supply	24 VDC / 24 VAC ±10 %, typ. 2.5 W	
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	
Interfaces	2 x Ethernet (100Base-T): OPC XML-DA, OPC UA, BACnet/IP**, BACnet/SC** LIOB-IP, KNXnet/IP, Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, VNC, SNMP 1 x LIOB-Connect 1 x LIOB-FT 1 x RS-485 (ANSI TIA/EIA-485): BACnet MS/TP** or Modbus RTU/ASCII (Master or Slave)	1 x EXT: M-Bus, Master EN 13757-3 (needs L-MBUS20 or L-MBUS80) or KNX TP1 (needs LKNX-300) or SMI (needs LSMI-800) 2 x USB-A: WLAN (needs LWLAN-800), EnOcean (needs LENO-80x) SMI (needs LSMI-804) LTE (needs LTE-800) MP-Bus (needs LMPBUS-804)
	LINX-202: **Either BACnet/IP, BACnet/SC or BACnet MS/TP LINX-203: ** Router between BACnet/IP, BACnet/SC and BACnet MS/TP	
L-IOB I/O Modules	Up to 8 L-IOB I/O Modules in any combination of type LIOB-10x, LIOB-15x, and LIOB-55x	
BACnet/IP Router	1 (LINX-203 only)	
Tools	L-INX Configurator	

*requires L-IOT1 software license

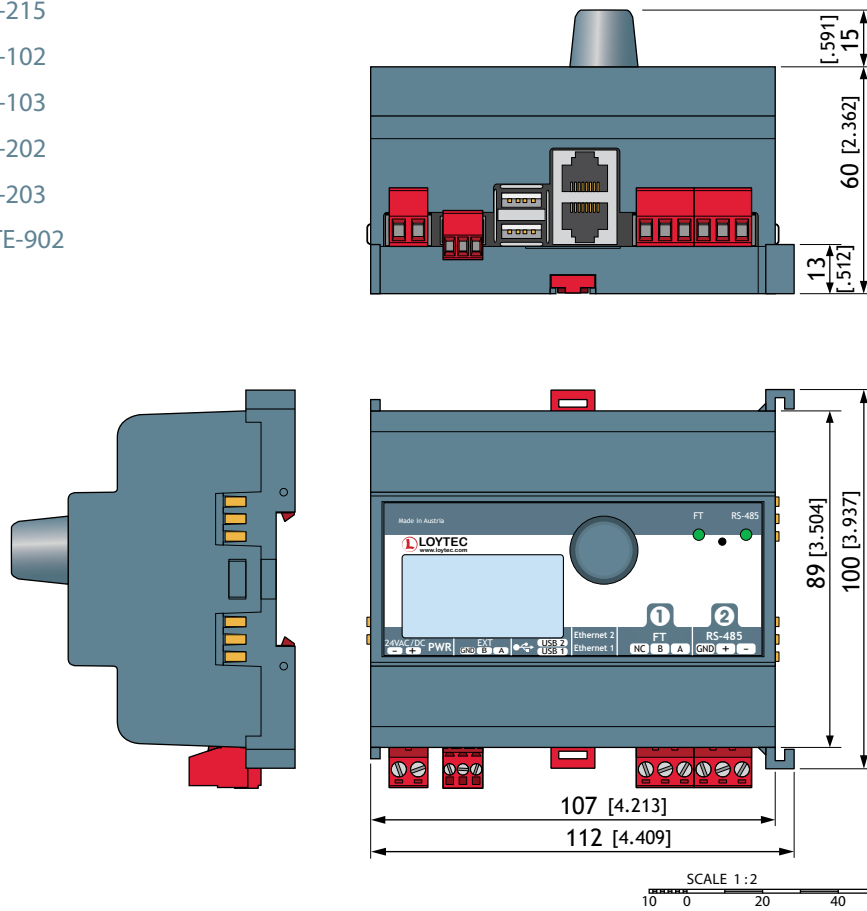
LINX-202, LINX-203

Resource limits			
Total number of data points	10 000	Alarm logs	10
OPC data points	2 000	M-Bus data points	1 000
BACnet objects	750 (analog, binary, multi-state)	Modbus data points	2 000
BACnet client mappings	750	KNX TP1 data points	250
BACnet calendar objects	25	KNXnet/IP data points	250
BACnet scheduler objects	100 (64 data points per object)	Connections (Local / Global)	1 000 / 250
BACnet notification classes	32	Number of L-WEB clients	32 (simultaneously)
Trend logs (BACnet or generic)	256 (13 000 000 entries, ≈ 200 MB)	L-IOB I/O Modules	8
Total trended data points	256	Number of EnOcean devices	25
E-mail templates	100	EnOcean data points	250
Math objects	100	SMI devices (per channel)	16
MP-Bus devices (per channel)	16		

Order number	Product description
LINX-202	BACnet Automation Server with LIOB-Connect, B-BC
LINX-203	BACnet Automation Server with LIOB-Connect, B-BC, and built-in BACnet/IP, BACnet/SC to MS/TP Router
LIOB-A2	L-IOB Adapter 2 to split the LIOB-Connect bus using 4-wire cables
LIOB-A4	L-IOB Adapter 4 to split the LIOB-Connect bus using RJ45 network cables
LIOB-A5	L-IOB Adapter 5 to terminate the LIOB-Connect bus
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-150	LIOB-FT I/O Module: 8 UI, 2 DI, 2 AO, 8 DO (4 x Relay 6 A, 4 x Triac 0.5 A)
LIOB-151	LIOB-FT I/O Module: 8 UI, 12 DI
LIOB-152	LIOB-FT I/O Module: 6 UI, 6 AO, 8 DO (8 x Relay 6 A)
LIOB-153	LIOB-FT I/O Module: 6 UI, 6 AO, 5 DO (4 x Relay 16 A, 1 x Relay 6 A)
LIOB-154	LIOB-FT 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-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 VDC, 15 W
LPOW-2415B	Power supply unit with power connector 24 VDC, 15 W
L-MBUS20	M-Bus level converter for 20 M-Bus devices
L-MBUS80	M-Bus level converter for 80 M-Bus devices
LKNX-300	KNX interface to connect KNX TP1 devices
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
LMPBUS-804	MP-Bus interface for 16 devices per channel, up to 4 channels
LSMI-800	Standard Motor Interface for 16 motors via EXT port
LSMI-804	Standard Motor Interface for 64 motors, 4 SMI channels via USB
LTE-800	LTE Interface
LRS232-802	USB to 2 x RS-232 Interface

Dimensions of the devices in mm and [inch]

- DIM045** LINX-215
 LINX-102
 LINX-103
 LINX-202
 LINX-203
 LGATE-902



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.