L-INX Automation Server

LINX-220, LINX-221

LOYTEC COMPETENCE PARTNER

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

Datasheet #89018918

BACnet | KNX | M-Bus | Modbus
OPC XML-DA | OPC UA | enocean® | SMI
WLAN | SNMP | ⚠ | 🕐
📈 | ✉ | 📊 | LIOB CONNECT
LIOB FT | LIOB IP | Gateway | ⇄
⇄ | | 🔒 | 💻
VNC | 🖥 | y=f(x) | &
BACnet | | 🌐 | 👁
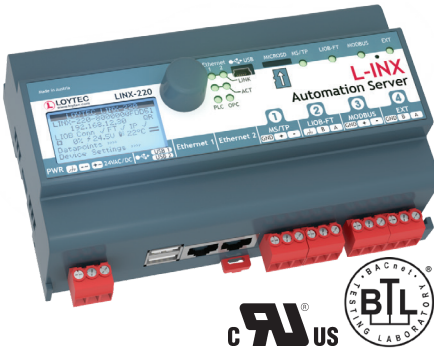
The L-INX Automation Servers LINX-220 and LINX-221 are powerful, programmable automation stations. They can host user specific graphical pages and can integrate physical I/Os through L-IOB I/O Modules via LIOB-Connect, LIOB-FT, or LIOB-IP. Local operation and override is provided by the built-in jog dial and the backlit display (128x64 pixels). Device and data point information is shown on the display via symbols and in text format.

The powerful Automation Servers provide connectivity functions to concurrently integrate BACnet, KNX, Modbus, and M-Bus subsystems. BACnet integration is supported through BACnet/IP (Ethernet/IP) or BACnet MS/TP (RS-485). LINX-221 Automation Servers feature a built-in BACnet/IP to MS/TP router including BBMD as well as Slave-Proxy functionality providing the complete feature set of the corresponding L-IP device. Both LINX-220 and LINX-221 implement the BACnet Building Controller (B-BC) profile and are BTL tested and WSPcert certified. In addition, the L-INX Automation Servers provide connectivity to KNXnet/IP and Modbus TCP via Ethernet/IP and to Modbus RTU via RS-485. M-Bus and KNX TP1 device integration needs optional interface modules.

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 firewall functionality of course to isolate particular protocols or services between the ports.

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.

Features

- IEC 61131-3 programmable with L-LOGICAD
- Physical inputs and outputs with 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
- Memory expansion with microSD card
- Alarming, Scheduling, and Trending (AST™)
- 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)
- Built-in OPC XML-DA and OPC UA server
- Dual switched or separated Ethernet ports
- Access to network statistics
- Compliant with ANSI/ASHRAE 135-2012 and ISO 16484-5:2012 standard
- Supports BACnet MS/TP or BACnet/IP
- BACnet Client Function (Write Property, Read Property, COV Subscription)

Functions

L-WEB

L-ROC

L-INX

L-IOB

Gateways

L-VIS, L-STAT

L-DALI

Routers, NIC

Interfaces

Accessories

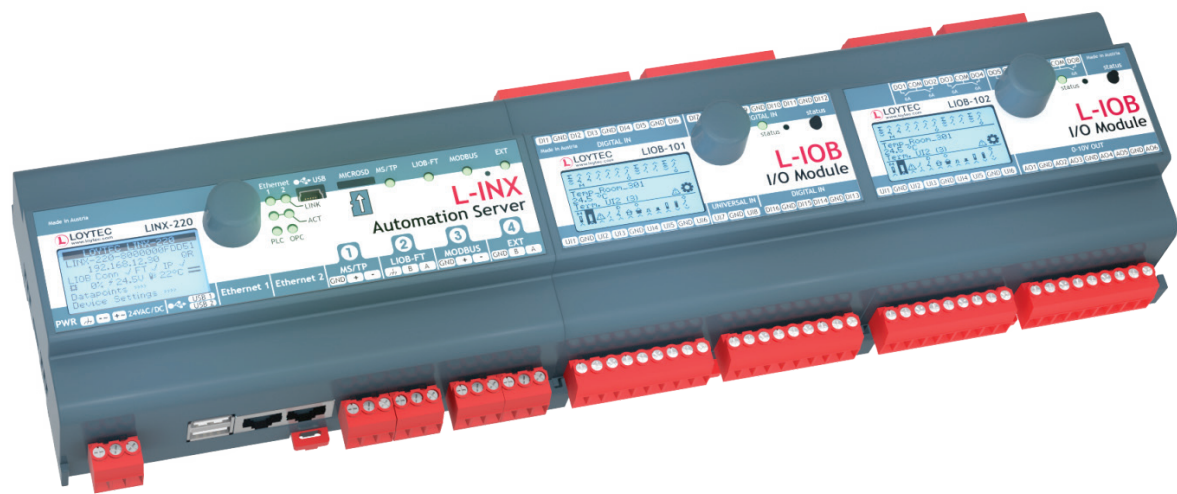**L-INX Automation Server**

LINX-220, LINX-221

- BACnet Client Configuration with configuration tool (scan and EDE import)
- B-BC (BACnet Building Controller) functionality, BTL certified
- Integrated BACnet/IP to BACnet MS/TP Router including BBMD as well as Slave-Proxy functionality (LINX-221 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
- Stores user-defined project documentation

Specifications	
Dimensions (mm)	159 x 100 x 75 (L x W x H), DIM005
Installation	DIN rail mounting following DIN 43880, top hat rail EN 50022
Power supply	24 V DC / 24 V AC ±10 %, typ. 2.5 W
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, non condensing, degree of protection: IP40, IP20 (terminals)
Interfaces	2 x Ethernet (100Base-T): OPC XML-DA, OPC UA, BACnet/IP*, LIOB-IP, KNXnet/IP, Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, SNMP · 1 x LIOB-Connect · 1 x BACnet MS/TP* · 1 x LIOB-FT · 1 x Modbus RTU (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) · LINX-220: * Either BACnet/IP or BACnet MS/TP · LINX-221: * Router between BACnet/IP and BACnet MS/TP
L-IOB I/O Modules	Up to 24 L-IOB I/O Modules in any combination of type LIOB-10x, LIOB-15x, and LIOB-55x
BACnet/IP Router	1 (LINX-221 only)
Program cycle time	Down to 10 ms
Programming, Tools	L-LOGICAD software (IEC 61131-3), L-INX Configurator

Resource limits			
Total number of data points	30 000	Alarm logs	10
OPC data points	10 000	M-Bus data points	1 000
BACnet objects	1 000 (analog, binary, multi-state)	Modbus data points	2 000
BACnet client mappings	5 000	KNX TP1 data points	1 000
BACnet calendar objects	25	KNXnet/IP data points	1 000
BACnet scheduler objects	100 (64 data points per object)	Connections (Local / Global)	2 000 / 250
BACnet notification classes	32	Number of L-WEB clients	32 (simultaneously)
Trend logs (BACnet or generic)	512 (4 000 000 entries, ≈ 60 MB)	L-IOB I/O Modules	24
Total trended data points	1 000	Number of EnOcean devices	100
E-mail templates	100	EnOcean data points	1 000
Math objects	100	SMI devices (per channel)	16

LINX-220, LINX-221

Order number	Product description
LINX-220	BACnet Automation Server with LIOB-Connect, B-BC
LINX-221	BACnet Automation Server with LIOB-Connect, B-BC, and built-in BACnet/IP to MS/TP Router
LINX-START-L	Starter kit: 1 x LINX-15x/12x/22x, 2 x L-IOB I/O Module, 1 x LPOW-2415A, and L-STUDIO software license
L-LOGICAD-USB	IEC 61131-3 programming tool, single license, includes USB dongle
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-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
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-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
LSMI-800	Standard Motor Interface for 16 motors via EXT port
LSMI-804	Standard Motor Interface for 64 motors, 4 SMI channels via USB

Functions
L-WEB
L-ROC
L-INX
L-IOB
Gateways
L-VIS, L-STAT
L-DALI
Routers, NIC
Interfaces
Accessories