

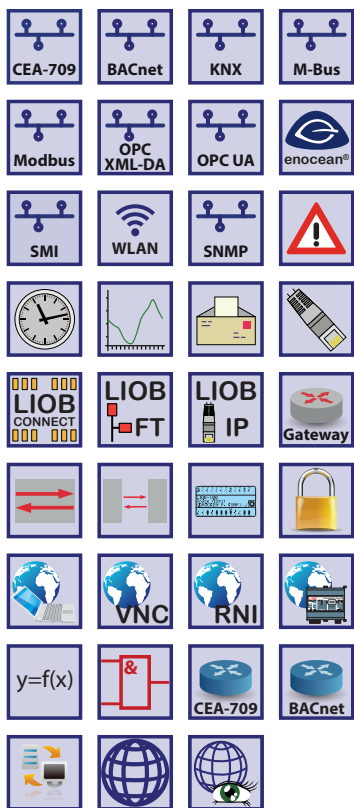
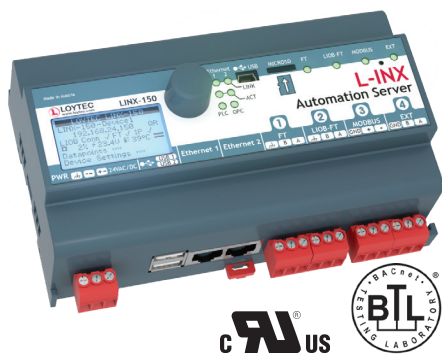
- ✓ BACnet
- ✓ CEA-709
- ✓ KNX
- ✓ Modbus
- ✓ M-Bus
- ✓ OPC



## L-INX Automation Server

# LINX-150, LINX-151

Datasheet #89026318



The L-INX Automation Servers LINX-150 and LINX-151 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 CEA-709 (LonMark Systems), BACnet, KNX, Modbus, and M-Bus subsystems. LonMark Systems can be integrated via IP-852 (Ethernet/IP) or TP/FT-10. BACnet integration is supported through BACnet/IP (Ethernet/IP) or BACnet MS/TP (RS-485). LINX-150 Automation Servers feature an integrated Remote Network Interface (RNI) to access the TP/FT-10 channel on the device via Ethernet/IP. LINX-151 Automation Servers feature two built-in routers, one IP-852 router and one BACnet/IP to MS/TP router including BBMD as well as Slave-Proxy functionality providing the complete feature set of the corresponding L-IP devices. Both LINX-150 and LINX-151 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 fire-wall 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.

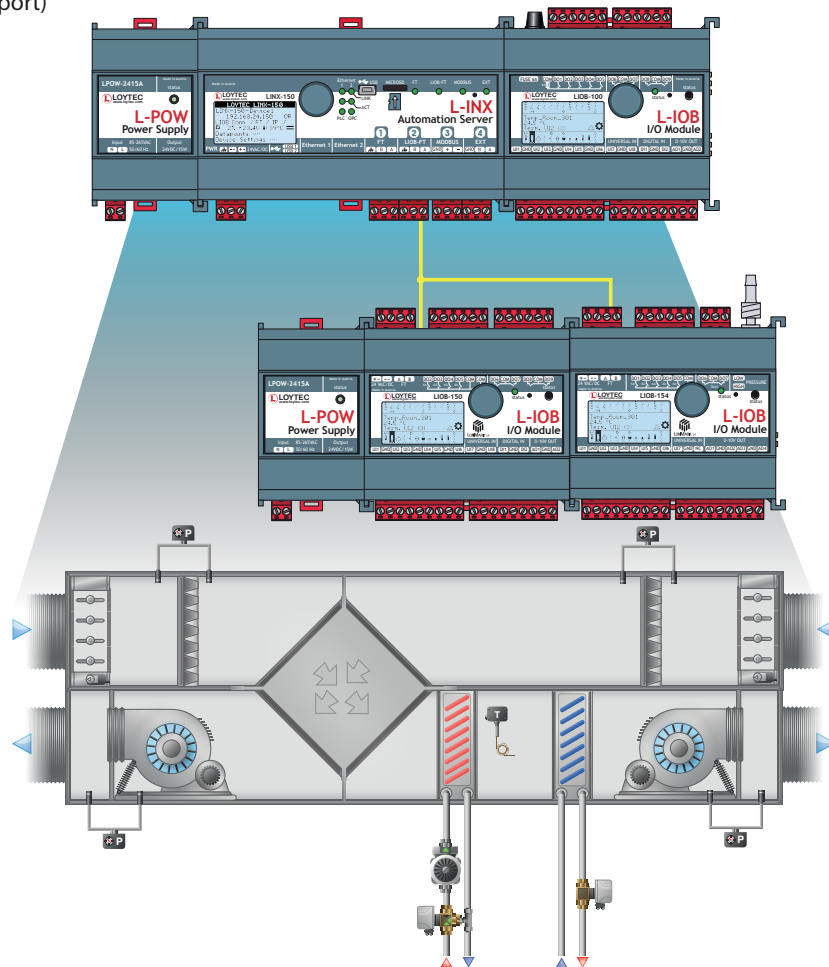
- Functions
- L-WEB
- L-ROC
- L-INX
- L-IOB
- Gateways
- L-VIS, L-STAT
- L-DALI
- Routers, NIC
- Interfaces
- Accessories

# L-INX Automation Server

## LINX-150, LINX-151

### Features

- IEC 61131-3 programmable with L-LOGICAD
- Physical inputs and outputs with L-IOB I/O Modules (LIOB-10x, LIOB-15x, and 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
- 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)
- 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 TP/FT-10 or IP-852 (Ethernet/IP)
- Support of dynamically created or static NVs
- Support of user-defined NVs (UNVTs) and Configuration Properties (SCPTs, UCPTs)
- Remote Network Interface (RNI) with 2 MNI devices (LINX-150 only)
- Integrated BACnet/IP to BACnet MS/TP Router including BBMD as well as Slave-Proxy functionality (LINX-151 only)
- Integrated IP-852 to TP/FT-10 Router (LINX-151 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)
- Gateway functions including Smart Auto-Connect™
- Modbus TCP and Modbus RTU (Master or Slave)
- Integrated web server for device configuration and monitoring data points
- Configurable via Ethernet/IP or TP/FT-10
- 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**

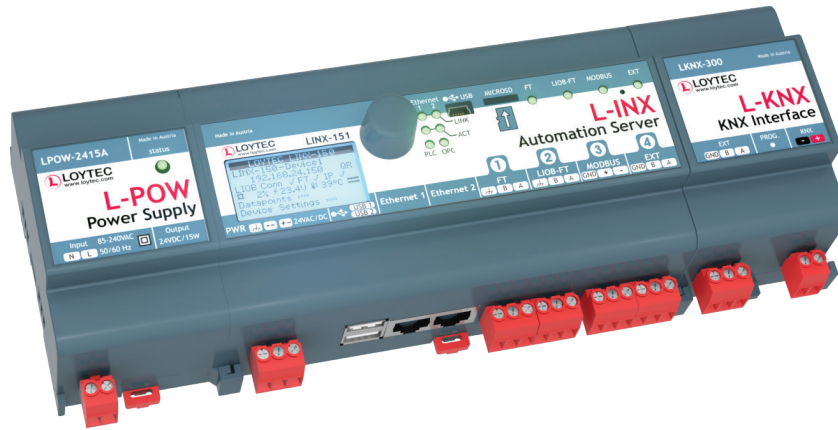
Dimensions (mm)	159 x 100 x 75 (L x W x H), DIM005		
Installation	DIN rail mounting following DIN 43880, top hat rail EN 50022		
Power supply	24 VDC / 24 VAC ±10 %, typ. 2.5 W		
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, non condensing, degree of protection: IP40, IP20 (terminals)		
Interfaces	2 x Ethernet (100Base-T): OPC XML-DA, OPC UA, LonMark IP-852*, BACnet/IP**, LIOB-IP, KNXnet/IP, Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, SNMP 1 x LIOB-Connect 1 x TP/FT-10* (LonMark System) 1 x LIOB-FT	1 x RS-485 (ANSI TIA/EIA-485): BACnet MS/TP** or 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)	
	<i>LINX-150: * Either LonMark IP-852 or TP/FT-10, ** Either BACnet/IP or BACnet MS/TP</i> <i>LINX-151: * Router between LonMark IP-852 and TP/FT-10, ** Router between BACnet/IP and BACnet MS/TP</i>		
L-IOB I/O Modules	Up to 24 L-IOB I/O Modules in any combination of type LIOB-10x, LIOB-15x, and LIOB-45x/55x		
Remote Network Interface	1 RNI with 2 MNI devices (LINX-150 only)		
BACnet/IP Router	1 (LINX-151 only)		
CEA-709 Router	1 (LINX-151 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	LonMark Schedulers	100
OPC data points	10 000	LonMark Alarm Servers	1
BACnet objects	1 000 (analog, binary, multi-state)	E-mail templates	100
BACnet client mappings	5 000	Math objects	100
BACnet calendar objects	25	Alarm logs	10
BACnet scheduler objects	100 (64 data points per object)	M-Bus data points	1 000
BACnet notification classes	32	Modbus data points	2 000
Trend logs (BACnet or generic)	512 (4 000 000 entries, ≈ 60 MB)	KNX TP1 data points	1 000
Total trended data points	1 000	KNXnet/IP data points	1 000
CEA-709 network variables (NVs)	2 000	Connections (Local / Global)	2 000 / 250
CEA-709 Alias NVs	2 000	Number of L-WEB clients	32 (simultaneously)
CEA-709 External NVs (polling)	2 000	L-IOB I/O Modules	24
CEA-709 address table entries	1 000 (non-ECS mode: 15)	Number of EnOcean devices	100
LonMark Calendars	1 (25 calendar patterns)	EnOcean data points	1 000
SMI devices (per channel)	16		

## L-INX Automation Server

## LINX-150, LINX-151



Order number	Product description
LINX-150	BACnet & CEA-709 Automation Server with LIOB-Connect and built-in Remote Network Interface (RNI)
LINX-151	BACnet & CEA-709 Automation Server with LIOB-Connect and built-in BACnet/IP & IP-852 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-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
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
LSMI-800	Standard Motor Interface for 16 motors via EXT port
LSMI-804	Standard Motor Interface for 64 motors, 4 SMI channels via USB