Functions

L-WEB

L-ROC

L-INX

L-IOB

Gateways

L-VIS, L-STAT

L-DALI

Routers, NIC

Interfaces

Accessories

BACnet ✓ Modbus

✓ CEA-709 ✓ M-Bus

✓ KNX ✓ OPC

L-INX Automation Server

LINX-102, LINX-103

Datasheet #89035218

CEA-709 | KNX | M-Bus | Modbus

OPC XML-DA | OPC UA | enocean® | SMI

WLAN | SNMP | ⚠ | 🕐

📈 | 📧 | 📊 | LIOB CONNECT

LIOB FT | LIOB IP | Gateway | ⇄

⇄ | 📟 | 🔒 | 🌐

VNC | RNI | 🖥 | y=f(x)

CEA-709 | 📃 | 🌐 | 👁🌐
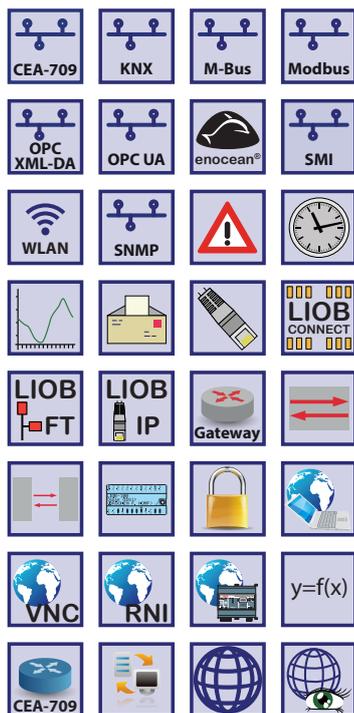
The L-INX Automation Servers LINX-102 and LINX-103 (successors of LINX-100, LINX-101) can host user specific graphical pages for the visualization of information from LonMark systems via LWEB-900 (Building Management) or LWEB-802/803. They can integrate physical I/Os through L-IOB I/O Modules via LIOB-Connect, 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.

LonMark Systems can be integrated via IP-852 (Ethernet/IP) or TP/FT-10. In addition, the Automation Servers provides 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 an integrated Remote Network Interface (LINX-102) or an integrated IP-852 router providing the complete feature set of corresponding L-IP devices (LINX-103).

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

- 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-45x)

- 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™)

- Event-driven e-mail notification

- Math objects to execute mathematical operations on data points

- Integrated OPC XML-DA and OPC UA server

- Dual switched or separated Ethernet ports

- Access to network statistics

- Compliant with CEA-709, CEA-852, and ISO/IEC 14908 Standard (LonMark System)

- Support 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)

L-INX Automation Server

LINX-102, LINX-103

- Remote Network Interface (RNI) with 2 MNI devices (LINX-102 only)
- Integrated IP-852 to TP/FT-10 Router (LINX-103 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 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)	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	12 – 35 V DC / 12 – 24 V AC ±10 %, typ. 2.5 W
Operating conditions	0 °C to 50 °C, 10 – 90 % RH @ 50 °C, non condensing, degree of protection: IP40, IP20 (terminals)
Interfaces	2 x Ethernet (100Base-T): OPC XML-DA, OPC UA, LonMark IP-852*, LIOB-IP, KNXnet/IP, Modbus TCP (Master or Slave), HTTP, FTP, SSH, HTTPS, Firewall, VNC, SNMP 1 x LIOB-Connect 1 x TP/FT-10* (LonMark system) together with LIOB-FT 1 x RS-485 (ANSI TIA/EIA-485): 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-102: * Either LonMark IP-852 or TP/FT-10* *LINX-103: * Router between LonMark IP-852 and TP/FT-10*
L-IOB I/O Modules	Up to 8 L-IOB I/O Modules in any combination of type LIOB-10x, LIOB-15x, and LIOB-45x
Remote Network Interface	1 RNI with 2 MNI devices (LINX-102 only)
CEA-709 Router	1 (LINX-103 only)
Tools	L-INX Configurator

Resource limits			
Total number of data points	10 000	Math objects	100
OPC data points	2 000	Alarm logs	10
Network variables (NVs)	1 000	M-Bus data points	1 000
Alias NVs	1 000	Modbus data points	2 000
External NVs (polling)	1 000	KNX TP1 data points	250
Address table entries	1 000 (non-ECS mode: 15)	KNXnet/IP data points	250
LonMark Calendars	1 (25 calendar patterns)	Connections (Local / Global)	1 000 / 250
LonMark Schedulers	100	Number of L-WEB clients	32 (simultaneously)
LonMark Alarm Servers	1	L-IOB I/O Modules	8
Trend logs	256 (4 000 000 entries, ≈ 60 MB)	Number of EnOcean devices	25
Total trended data points	256	EnOcean data points	250
E-mail templates	100	SMI devices (per channel)	16

L-INX Automation Server
LINX-102, LINX-103

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Order number	Product description
LINX-102	CEA-709 Automation Server with LIOB-Connect and built-in Remote Network Interface (RNI)
LINX-103	CEA-709 Automation Server with LIOB-Connect and built-in IP-852 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 1 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 1 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 1 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 1 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 1 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