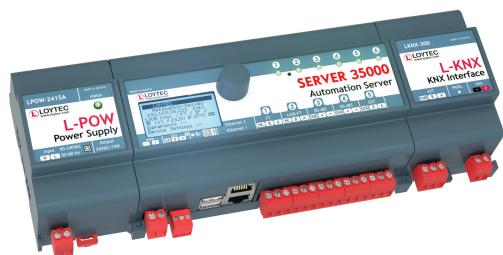


- ✓ BACnet
- ✓ CEA-709
- ✓ KNX
- ✓ Modbus
- ✓ M-Bus
- ✓ OPC
- ✓ MP-Bus



Automation Server SERVER 35000



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). Automation Servers feature an integrated Remote Network Interface (RNI) to access the TP/ FT 10 channel on the device via Ethernet/ IP. 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 IP devices.

The automation servers implement the BACnet Building Controller (B-BC) profile and are BTL certified. In addition, the automation server provides connectivity to KNXnet/ IP and Modbus TCP via Ethernet/ IP and to Modbus RTU via RS 485. M Bus and KNX TP1 device integration



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. 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.

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 30 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.

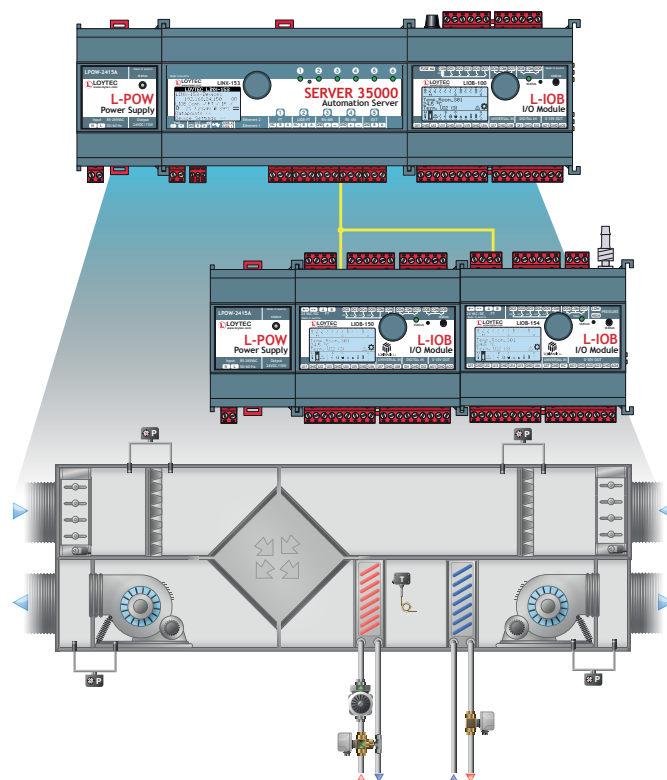
The automation server manages user-specific graphical pages with dynamic content for the visualization of information. The visualization of dynamic graphical pages is carried out by HTML5 PC Application or HTML5 in Web browser on one or more PCs or mobile devices. The automation server can also be integrated in the Building Management System. For the dynamic visualization of information, no additional browser plug-in is required. SSL-encrypted web services (OPC XML-DA) are used to access the data. Per Automation Server, multiple graphical applications can exist in parallel. The automation server can be accessed over an IP connection by several users simultaneously.

The automation server features scheduling, alarming, and trending. These functions are also accessible via the graphical user interfaces, or the Building Management System. Additionally, the user can access schedules and alarm lists via the integrated web server.

An event-driven e-mail notification, as the result of a predefined action, informs about the operating status. The e-mail text can be freely designed. The placement of dynamic values in the text is possible. Stored trend data (CSV file) can be forwarded as attachment.

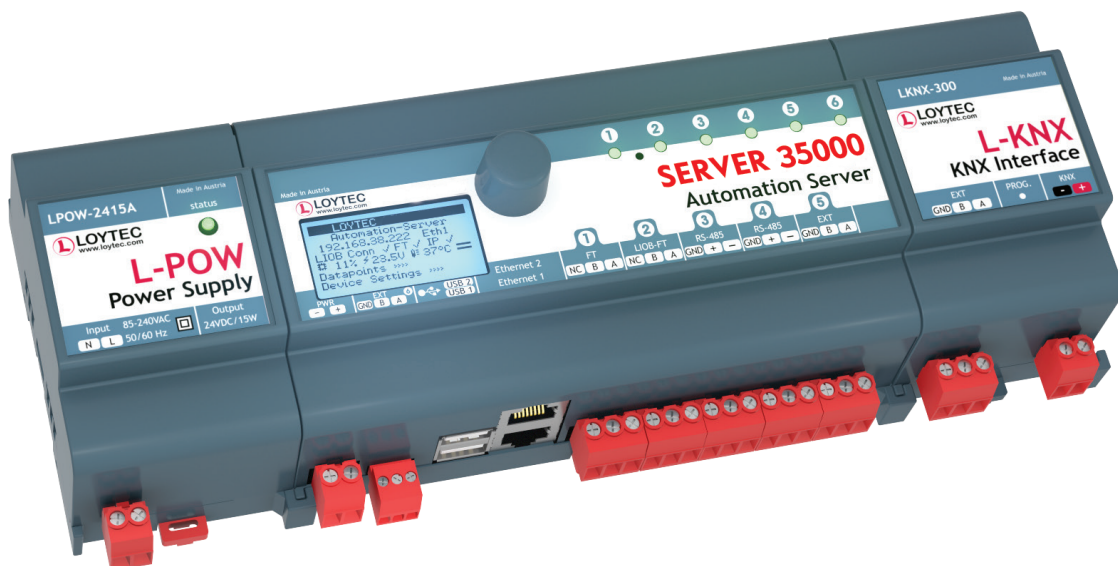
Features

- Programmable with L-STUDIO IEC 61131-3 and IEC 61499
- 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
- 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
- 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
- Integrated BACnet/IP to BACnet MS/TP Router including BBMD as well as Slave-Proxy functionality
- Integrated IP-852 to TP/FT-10 Router
- 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 TP/FT-10 or Ethernet/IP
- Connection to EnOcean wireless devices via LENO-80x Interface
- Supports SMI (Standard Motor Interface) through LSMI-800 or LSMI-804
- Supports MP-Bus through LMPBUS-804 Interface
- Supports WLAN through LWLAN-800 Interface
- Stores user-defined project documentation



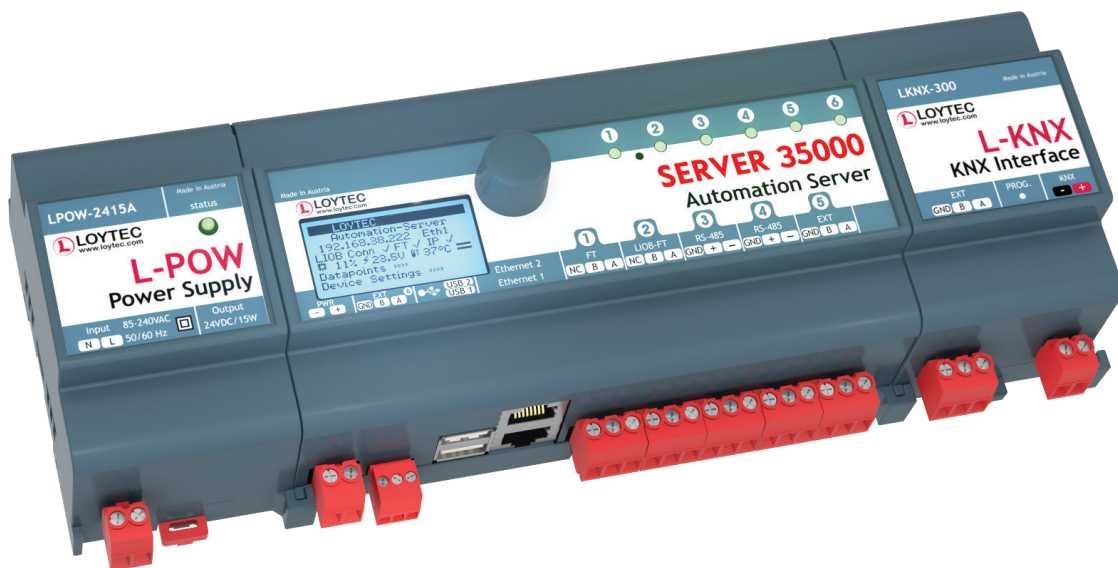
Specifications

Dimensions (mm)	159 x 100 x 75 (L x W x H), DIM053	
Installation	DIN rail mounting following DIN 43880, top hat rail EN 50022	
Power supply	24 VDC / 24 V AC $\pm 10\%$, typ. 2.5 W	
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, non condensing, degree of protection: IP40, IP20 (terminals)	
Interfaces (LINX-153)	4 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, VNC, SNMP 1 x LIOB-Connect 1 x TP/FT-10 (LonMark System) 1 x LIOB-FT 2 x RS-485 (ANSI TIA/EIA-485): BACnet MS/TP or Modbus RTU (Master or Slave) 2 x EXT: M-Bus, Master EN 13757-3 or KNX TP1 or SMI 2 x USB-A: WLAN, EnOcean, SMI, MP-Bus	
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	
BACnet/IP Router	1	
CEA-709 Router	1	
Program cycle time	Down to 10 ms	



Resource limits

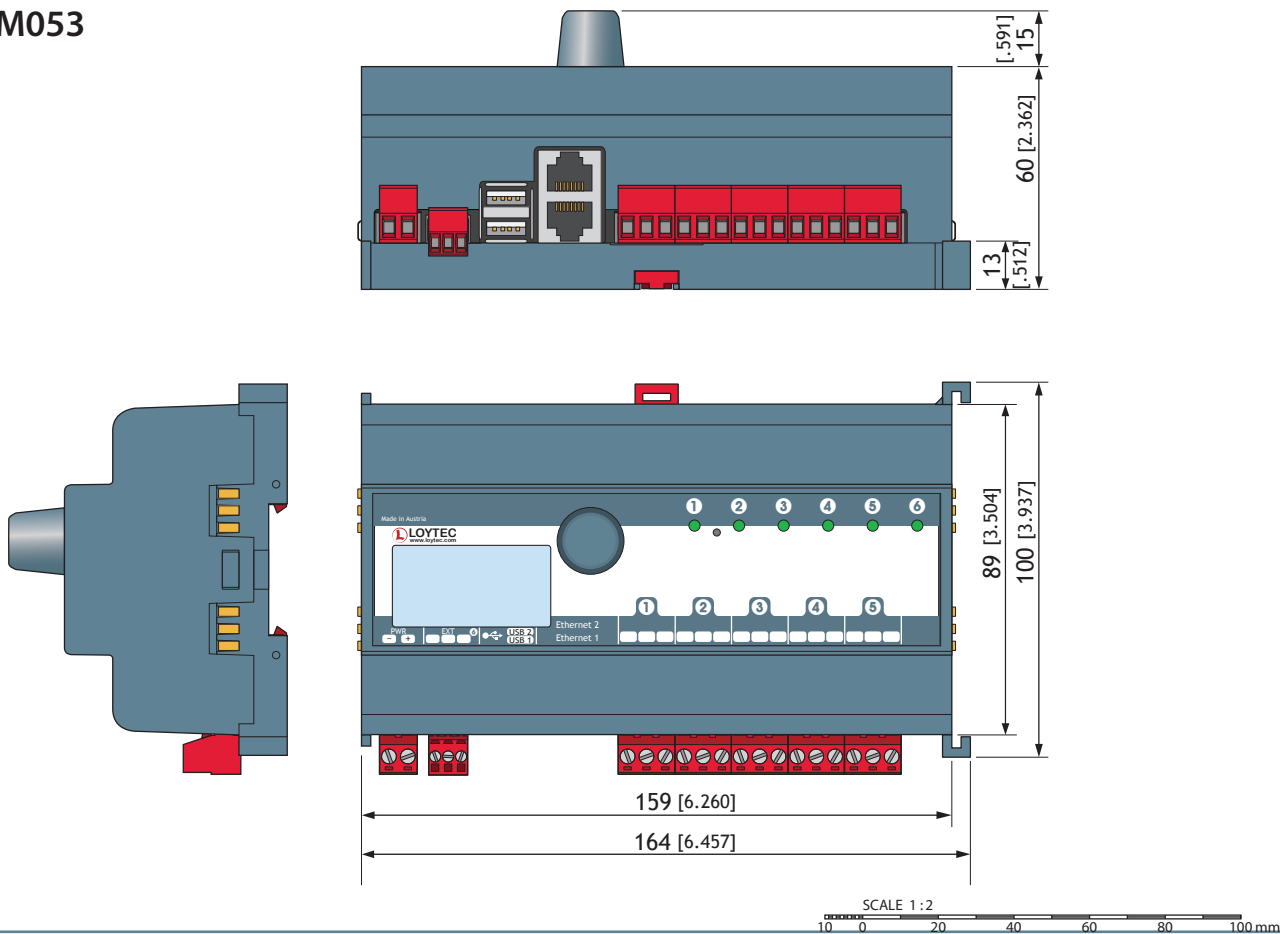
Total number of data points	35 000	LonMark Schedulers	100
OPC data points	10 000	LonMark Alarm Servers	1
BACnet objects	7 000 (analog, binary, multi-state)	E-mail templates	100
BACnet client mappings	5 000	Math objects	100
BACnet calendar objects	25	Alarm logs	10
BACnet scheduler objects	100 (64 data points per object)	M-Bus data points	1 000
BACnet notification classes	32	Modbus data points	2 000
Trend logs (BACnet or generic)	512 (6 000 000 entries, ≈ 120 MB)	MP-Bus devices (per channel)	16
Total trended data points	1 000	KNX TP1 data points	1 000
CEA-709 network variables (NVs)	2 000	KNXnet/IP data points	1 000
CEA-709 Alias NVs	2 000	Connections (Local / Global)	2 000 / 250
CEA-709 External NVs (polling)	2 000	Number of L-WEB clients	32 (simultaneously)
CEA-709 address table entries	1 000 (non-ECS mode: 15)	L-IOB I/O Modules	24
LonMark Calendars	1 (25 calendar patterns)	Number of EnOcean devices	100
SMI devices (per channel)	16	EnOcean data points	1 000



Order number	Product description
L-STUDIO	L-ROC programming and configuration software
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
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

Dimensions of the devices in mm and [inch]

DIM053



DIM054

