

## L5300 LinkRack

## L5301 Remote LinkRack

### DESCRIPTION

The L5300 LinkStation is a high speed intelligent microprocessor device used for industrial process control applications. It is a housing that contains the processor and power supply and is the heart of a *LINK* control system network. The L5301 looks identical to the L5300, but is designed to be a remotely mounted input-output rack in a distributed *LINK* control system.

Using the Windows based graphical software package Drive System Designer (DSD) and appropriate LinkCards, you can configure the L5300 for line sequencing, process control functions— such as draw and loadcell control— and direct control of all motor drive controllers connected to the same *LINK* control network. The L5301 has limited memory and processing capabilities compared to the L5300 and is to be used primarily as remote digital and analog I/O for the *LINK* system.

**NOTE.** You must use DSD or ConfigEd version 5 or greater to configure the L5300 and the L5301. The units are *not* compatible with earlier versions.

The LinkRacks have four slots for adding various LinkCards. An L5311, RTN LinkCard is required with each unit to communicate with the standard acrylic fiber *LINK* network. Other LinkCards include analog and digital I/O, DeviceNet, glass RTN, and more. Detailed information on these LinkCards may be found in individual datasheets. A LinkCard may be fitted in any slot; the site mapping is done in software by the user. EMI shields in the form of blank LinkCards fill the remaining unused slots (see the FRONT VIEW drawing on page 4). Note: The L5301 supports only RTN, digital and analog LinkCards.

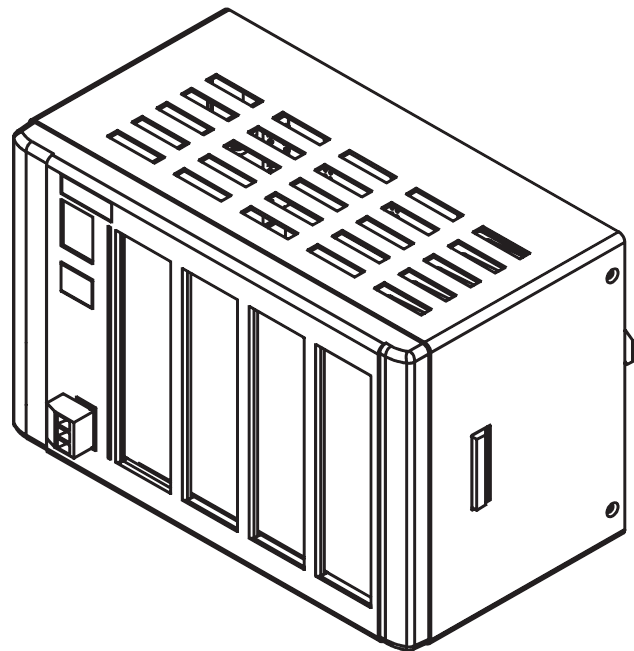


Figure 1 - The LinkRack



### **WARNING!**

This equipment accepts supply power that can be a shock hazard and can cause injury or death. *Never* install or wire any electrical equipment without first isolating all incoming and outgoing power supplies.

INSTALLATION

Mounting

The L5300/L5301 is intended to be a din rail mounted device. Holding the LinkRack with both hands, tilted upwards, engage the two rear panel hooks to the top edge of the din rail. Swivel downwards until the clip snaps into the bottom edge of the rail. To remove, insert a slotted screwdriver into the clip at the bottom of the LinkRack and pry upwards. This releases the bottom edge of the unit; then tilt upwards and away from the panel. Ensure that the din rail is securely fastened to the panel. For fastening directly to a panel, use the panel mounting kit supplied. Mount the two brackets to the rear panel of the LinkRack, in vertical orientation, using the four screws supplied. Then mount the assembly to your panel, referencing figure 2 for mounting dimensions.

NOTE. Be certain that the L5300/L5301 is properly ventilated to ensure that it does not exceed its temperature rating, listed in the *Technical Specifications* section.

Wiring

The L5300/L5301 accepts an 85 to 265 VAC, 50/60 Hz supply. It is designed for a standard three-wire AC supply connection (LINE, NEUTRAL and GROUND). The terminal block will accept wire sizes of 14 to 18 AWG.

NOTE. The installation of this equipment must comply with all applicable national and local electrical codes.

The fiber optic terminals on the L5311 acrylic RTN LinkCard accept *only* Thomas and Betts (T&B) connectors. If replacing older model *LINK* components, you will not need to re-terminate existing cable since the unit's fiber optic terminals are identical to those on first generation *LINK* products. Otherwise, 1000 micron diameter polypropylene fiber optic cable is recommended. You do not need special cutting and polishing tools to terminate this cable to T&B connectors.

You can connect the unit to a *LINK* fiber optic network as a simple, tapped or redundant ring. Refer to the *LINK Overview Manual* (HA350678) for a discussion of *LINK* network topologies. Each transmitter has an adjustable transmission range (see the table in Figure 3).

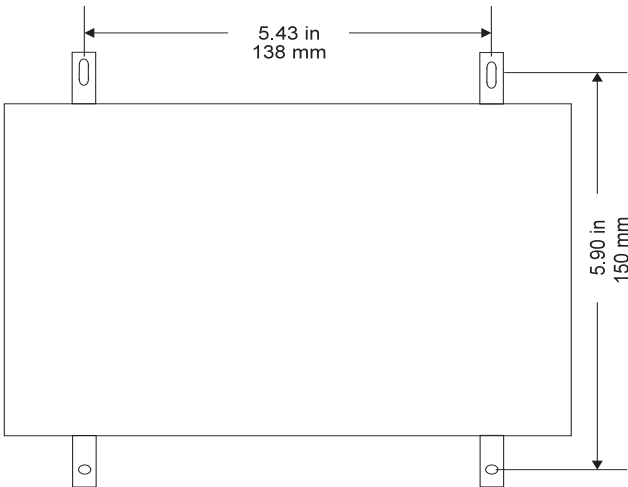


Figure 2 - LinkRack Panel Mounting Detail

Caution

Do not operate the unit without the LinkRack cover. It is a functional element of the LinkRack without which the module will not operate satisfactorily.

Caution

Do not operate the unit without the EMI shields (blank LinkCards) fitted in unused slots.

Switch	Position	1000 micron plastic cable
	center (low)	0 to 20m (0 to 66ft)
	left (medium)	20 to 40m (66 to 132ft)
	right (high)	40 to 60m (132 to 196ft)

Figure 3 - Fiber Optic Transmission Range Settings

## SETUP & TROUBLESHOOTING

Apply power once you have fully wired the unit. If the unit has a configuration pre-installed in its memory, the *LINK* network is established and all *LINK* devices on the network are functional, the seven-segment green LED status display should read "7".

If the display does not power up, you may connect the serial port on a personal computer running DSD or ConfigEd version 5 or higher, to the module's RTNX port located on the face of the unit. Poll the module with the GET INFO function to identify the state. Or, check the status display on the face of the unit. Each number or letter indicates a different error. Use the table below to identify the error and correct the problem.

NOTE. All *LINK2* modules operate in either a "boot" or a "run" state. The decimal point in the status display differentiates between the two. If the decimal is on, then the module is in boot mode; if off, it is in run mode. A blinking status number— shown below with an asterisk (\*)— indicates that the module is not running its configuration.

### Status Display codes

#### BOOT CODES

Code	Status	Meaning/Action
1. *	Halted	DSD/ConfigEd requested boot mode or rear cover is off. Replace rear cover or restart the module.
2. *	No Config	Flash memory is empty, or persistents were invalid. Reinstall the configuration.
5. *	Self-Test-Failure	One or more self tests failed. Contact Customer Service.

#### RUN CODES

Code	Status	Meaning/Action
0 *	Initializing	Configuration is decompressed from flash into ram.
1 *	Halted	DSD/ConfigEd requested halt. Use ConfigEd to restart module.
2 *	No Config	Persistents were invalid. Reinstall the configuration.
3 *	L-Error	Low-level error. See <i>LINK Overview Manual</i> section 8.3.3.
4 *	H-Error	High-level error. Indicates a problem with a function block. Contact customer service.
6 *	Shutdown	A function block (likely <i>SYSTEM CONTROL</i> ) forced a shutdown.
7	OK	Module is running and the fiber optic network is OK locally.
8	Network Warning	Brief loss of received <i>LINK</i> signal, or a long-term loss in topologies where the signal is redundant or optional. Network is intact but may require service.
9	Net Fail	Long-term loss of a fiber optic signal which is required by the configured topology.
A *	Checking Net	Module is starting-up and attempting to send a message to itself. If it persists, the ring is physically broken.
b *	Peer Halted	Module is starting-up and was able to send a message to itself. It waits here for all other modules to do the same.
C *	Dup. Address	While "Peer Halted", the module found duplicates of its configured address in other module(s). Use DSD/ConfigEd to install configurations with unique addresses.

## TECHNICAL SPECIFICATION

### Electrical

Supply type	3 wire, single phase, type TN only
Voltage	85-265 VAC, 48-62 Hz; Overvoltage category 3
Rating	35 VA (300 mA at 115 VAC, 150 mA at 230 VAC)
Backplane Rating	2500 mA maximum at 5 VDC, available for LinkCards
Leakage Current	0.38mA
Power Terminals	14-18 AWG (Copper only) wire size to plug-in screw terminal block. Terminal torque 5 to 7 in-lbs.
Fiber Optic Terminals	Up to 196 ft. (60 m.) maximum transmission distance, 1000 micron polypropylene cable with 2 mm acrylic jacket

### Mechanical

Weight	4.2 lbs. (1.9 Kgs.)
Overall Dimensions	5.04 H x 7.68 W x 4.53 D inches (128 H x 195 W x 115 D mm)

### Display

Status	7 segment green LED status. See STATUS DISPLAY CODES for details
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### Environmental

Operating Temperature	0 to 50°C (32 to 122°F) Meets or exceeds Class 3K3
Storage Temperature	-10 to 70°C (14 to 158°F)
Power Dissipation	3 Watts without LinkCards
Humidity	85% relative humidity, dry, non-condensing environment
Ratings	IP00 Touchsafe. Intended for mounting inside an enclosure.

