

LN Series Input/Output (I/O) Extension Modules

Subnetwork for LN-PRG6x0-2

Application Note

LN-IOE400-0, LN-IOE410-0, LN-IOE420-0, LN-PRG6x0-2

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LN Series Input/Output (I/O) Extension Modules Subnetwork for LN-PRG6x0-2

Application Note

Document Introduction

This document describes the subnetwork for the LN Series Input/Output Extension Modules used with the LN Free Programmable PRG 600 Series Controllers. The LN Free Programmable PRG 600 Series Controllers use the subnetwork to support one or more extension modules with structural cabling. This document does not describe how to set up a LONWORKS® network. For information on setting up your LONWORKS® network, refer to the *LONWORKS LN-Series Network Communication and Interface Guide Technical Bulletin (LIT-12011253)*.

Related Documentation

Table 1: Related Documentation

For Information On	See Document	LIT or Part Number
Setting Up a LONWORKS Network	<i>LONWORKS LN-Series Network Communication and Interface Guide Technical Bulletin</i>	LIT-12011253
Installing LN Free Programmable PRG 600 Series Controllers	<i>LN Free Programmable PRG 600 Series Controllers Installation Instructions</i>	LIT-12011691
Installing LN Series Input/Output (I/O) Extension Modules	<i>LN Series Input/Output (I/O) Extension Modules Installation Instructions</i>	LIT-12011693
LN Free Programmable PRG 600 Series Controllers and LN I/O Extension Modules Features and Benefits	<i>LN Free Programmable PRG 600 and LN Input/Output Extension Modules Product Bulletin</i>	LIT-12011656

Subnetwork

Figure 1 shows the LN Series Input/Output Extension modules on the subnetwork with the proper End-of-Line (EOL) terminations.

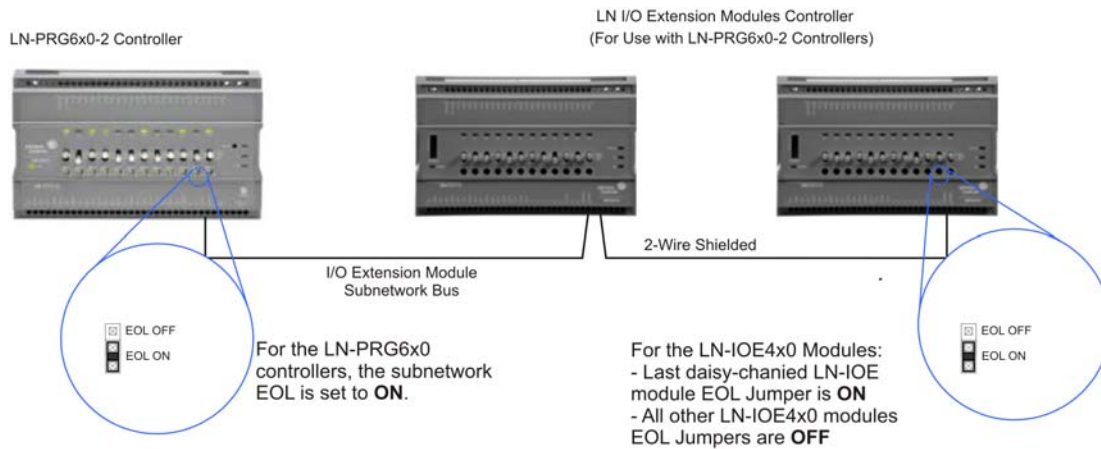


Figure 1: EOL Termination Settings on Subnetwork

Topology and EOL Terminations

Set the EOL terminations on the LN Free Programmable PRG 600 Series Controller and the last LN I/O Extension Module to ON. All other extension modules must have their EOL termination set to OFF (Figure 1).

Note: In Figure 1, the EOL jumpers are located on the inside of the controller and modules.

Subnetwork Length

The total maximum length of the subnetwork is 300 meters (1,000 feet). The polarity of the LN Series I/O Extension Modules must be configured as shown in Figure 2. All terminals identified as SUBNET+ must be connected to the same conductor. Similarly, all terminals identified as SUBNET- must be connected to the same conductor.

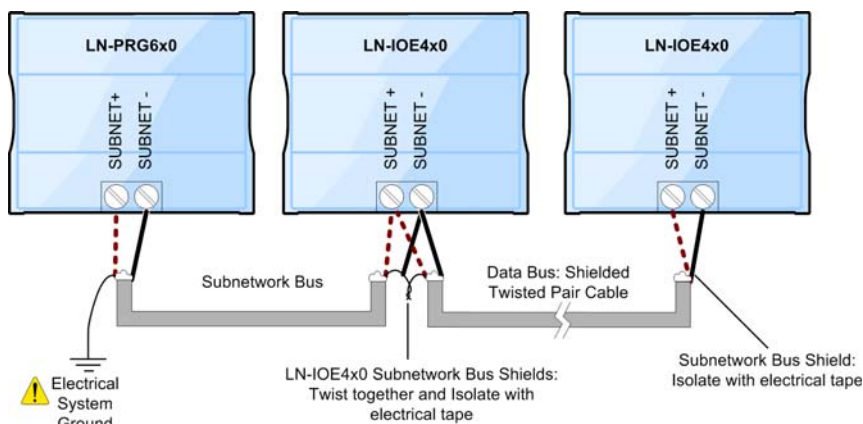


Figure 2: LN-PRG6x0 Controllers Subnetwork Shielding

Use properly grounded, shielded cable for the best protection against interference on the LN Series I/O Extension Module subnetwork. Use the daisy-chain configuration with the cable shield twisted together and isolated with electrical tape at each extension module.

When you use an LN Free Programmable PRG 600 Series Controller, connect the shielding of the extension modules on the subnetwork to the electrical system ground at one point only (Figure 2).

Physical Specifications and Cable Requirements

Use cables composed of stranded conductors, instead of solid conductors, for the best breakage resistance during pulling operations. Table 2 describes the physical specifications and cable requirements for an LN Series I/O Extension Module subnetwork.

Table 2: Physical Specifications and Cable Requirements

Specification	Description
Maximum Number of LN Series I/O Extension Modules	2 LN Series I/O Extension Modules
Media	Shielded, Twisted Pair
Characteristic Impedance	100–130 ohm
Distributed Capacitance	Less than 100 pF per meter (30 pF per foot)
Maximum Length of the LN Series I/O Extension Modules Subnetwork	300 meters (1,000 ft.) Maximum
Polarity	Polarity Sensitive
Multi-Drop	Daisy-chain (No Routers)
End-of-Line (EOL) Terminations	Built-in and set (enabled) on the last extension module only.
Shield Grounding	See Figure 2.

Addressing

Each LN Series I/O Extension Module on the subnetwork must have a unique address. The current valid addresses are 1 or 2. Figure 3 shows an example of how to set a DIP switch. Table 3 shows the DIP switch settings.



Figure 3: DIP Switch Set to 2

Table 3: DIP Switch Settings

Switch Position			Value
1	2	3	
OFF	OFF	OFF	Invalid
ON	OFF	OFF	1
OFF	ON	OFF	2
ON	ON	OFF	Invalid
OFF	OFF	ON	Invalid
ON	OFF	ON	Invalid
OFF	ON	ON	Invalid
ON	ON	ON	Invalid



Building Efficiency

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