WOODWARD

Product Manual 02826
(Revision A)
Original Instructions

LINKnet™ Option
for use with 723 Digital Controls

Operation Manual

Chapter 1.
LINKnet* I/O Network

Introduction

The LINKnet* option provides distributed I/O capabilities for the 723 control system. The LINKnet I/O modules are well suited for non-time-critical control functions like sequencing and monitoring.

Other manuals that may prove helpful are:

02007	DSLC Digital Synchronizer and Load Control
02758	723 Hardware Manual
02784	723 Software/DSLC Compatible
02785	723 Software/Analog Load Share

Network Architecture

An I/O network consists of a 723 LINKnet channel, which provides independent network trunks of up to 60 I/O modules. The LINKnet I/O modules, or nodes, on each trunk are attached to the 723 via a single twisted pair wire.

Each LINKnet I/O module has two rotary switches that are used to set its network address. On installation, these switches must be dialed so that the I/O module's number (1 to 60) matches the network address defined for this I/O module in the application program. The I/O modules may be placed in any order on the network, and gaps are allowed in the address sequence.

Hardware

Each network consists of one LINKnet channel of a 723 and many I/O modules. The I/O modules include thermocouple, RTD, (4 to 20) mA, and discrete input modules, as well as (4 to 20) mA and relay output modules. All of the analog modules consist of six channels per module. The relay output module contains eight channels, and the discrete input module has 16 channels.

Each I/O module is housed in a plastic, field termination module-type package for DIN rail mounting. The LINKnet I/O modules can be mounted in the control cabinet or in any convenient location in the vicinity of the engine or turbine that meets the temperature and vibration specifications. Each I/O module must be grounded to the DIN rail through a grounding block (Woodward part number 1604-813).

All LINKnet I/O modules communicate with the 723 through shielded twisted pair wiring. The specifications for the LINKnet system require that listed level V type cable be used. The network may be wired directly from I/O module to I/O module, as shown in Figure 1-1, or the I/O modules may be connected to the network via stubs, as in Figure 1-2. A termination network (Woodward part number 9905-760) must be installed at the last LINKnet I/O module on the network. There is no polarity associated with the network wiring. For optimum EMC performance, the network cable shield should be landed at each I/O module, and the exposed wire length limited to 25 mm (1 inch). At the 723, the outer insulation should be stripped and the bare shield landed to the chassis.

*—Trademark of Woodward, Inc.

All field wiring should be shielded. The shield should be landed in the terminal block provided, and the exposed wiring, after the shield is separated, should be limited to 25 mm.

IMPORTANT

The LINKnet modules should always be installed in an enclosure provided by the user, or be otherwise operator inaccessible. The modules should be accessed only for maintenance purposes, in which case, the ESD procedures on page ii should be followed.

For Lloyd's Register of Shipping applications, the power to each I/O module must be transient-protected through the use of Termitab-UK 5/24 AC suppressors (from Phoenix Contact). Up to six I/O modules can be protected by one set (1 pair) of suppressors. Also, the power for the Discrete Inputs must be transient-protected. When the power is provided by a power source external to the Discrete Input module, the power requires the same suppressors (Phoenix Contact UK 5/24 AC) required for input power for all I/O modules (see Figure 1-1).

IMPORTANT

Use only recommended shielded twisted pair data cable, provided by the user, for the LINKnet network. Correct cable is available from Woodward, Belden, or other suppliers providing an equivalent cable.

Woodward part number 2008-349

Belden
PO Box 1980
Richmond IN 47375
(317) 983-5200

Belden Part Number	**Description**
9207	PVC 20 AWG (0.5 mm²) shielded. NEC Type CL2, CSA cert. PCC FT 1.
89207	Teflon 20 AWG (0.5 mm²) shielded, Plenum version. NEC Type CMP, CSA cert. FT 4.
YR28867	PVC 22 AWG (0.3 mm²) shielded
YQ28863	Plenum 22 AWG (0.3 mm²) shielded

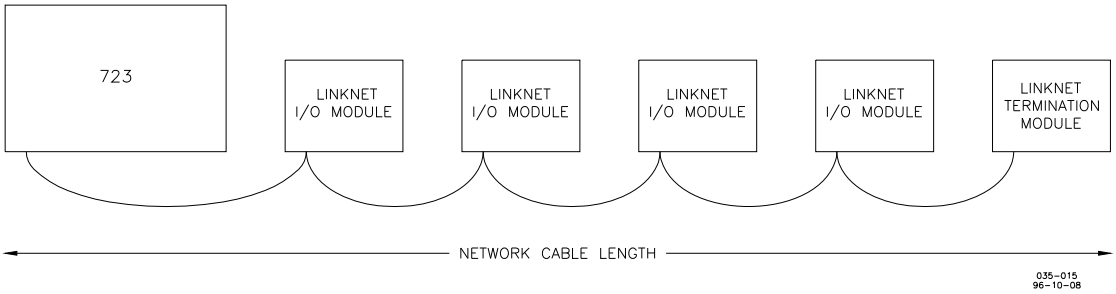


Figure 1-1. Direct Wired Network