AutoMax Network Interface to FlexPak 3000

The AutoMax Network Interface to FlexPak 3000 is an option card which enables communication between the FlexPak 3000 digital D-C Drive and the AutoMax real-time Distributed Control System NETwork (DCS-NET). The FlexPak 3000 can receive reference, control and tuning information and send monitor information such as feedbacks and drive status through this high speed (875K Baud) network link. The data is predefined on the DCS-Net through fixed memory mapping to ensure minimal programming.

This network option card is mounted inside the FlexPak 3000 printed circuit board carrier requiring no additional panel or cabinet space.
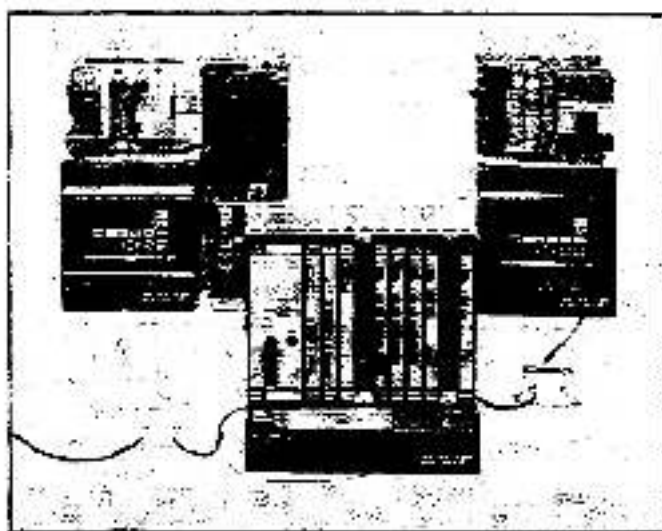
NETWORK OVERVIEW/SPECIFICATION

DCS-NET is a master/slave control network designed for high speed coordination between multiple drive sections. Data is transmitted and received over a singe coaxial cable. DCS-NET supplies the link to connect multiple AutoMax racks, personal computers, Reliance A-C and D-C drives and operator interface terminals to a distributed control system. The network has a throughput data rate of 875 kilobaud at distances up to 3000 feet. The network supports up to 55 slave drops from one master. A version 2.0 or higher FlexPak 3000 is required and fixed memory mapping is employed.

INPUT DATA TYPES

Control and Reference – These inputs are updated at the fastest rate from the network card to the drive regulator (one/processor scan) and include sequencing data such as Start, Stop, Run, Jog Fwd/Rev, etc. and Speed/Torque reference.

Tunable inputs - These include parameters such as accel/decel rates, min/max limits, gains and offsets etc. These parameters can be changed while the drive is running or when it is stopped and are updated every 100ms.

Configurable inputs – These parameters can be changed when the drive is stopped and are updated every 500 ms. These parameters include items such as I/O configuration and motor nameplate data.

OUTPUT DATA TYPES

Runtime signal – These include feedbacks such as current, speed and voltage as well as reference information and are updated to the Network card every processor scan.

Tunable/Configuration/Status – These include status bits, gain setting and rates and are updated every 100ms. A Tune/Config Update Synchronization Flag allows the programmer to determine when all drive configurations on the Network have been updated to ensure coordinated control.

The Drive can be setup to respond in one of three ways should a communications loss occur (maintain last reference, use terminal board input reference or coast/DB stop).

FLEXPAK 3000
AUTOMAX NETWORK INTERFACE

CONNECTION TYPES

The AutoMax Network Option card supports two connection types, **Basic** and **Full**. The Basic connection covers the majority of applications by transmitting basic reference, control and status information using a drop depth of one. When configured in this mode up to 46 FlexPak 3000 drives can be connected on a single network. Should more detailed drive information be required, the Network Option Card can operate at a drop depth of 4 allowing virtually all parameters to be accessed across the network. This mode limits the number of drives on the network to 12.

RELATED HARDWARE

57C380 – Communications Passive Tap
57C381 – Cable (network card to Passive Tap)
57C404 – AutoMax Network Card
915FK0101 – FlexPak to AutoMax network
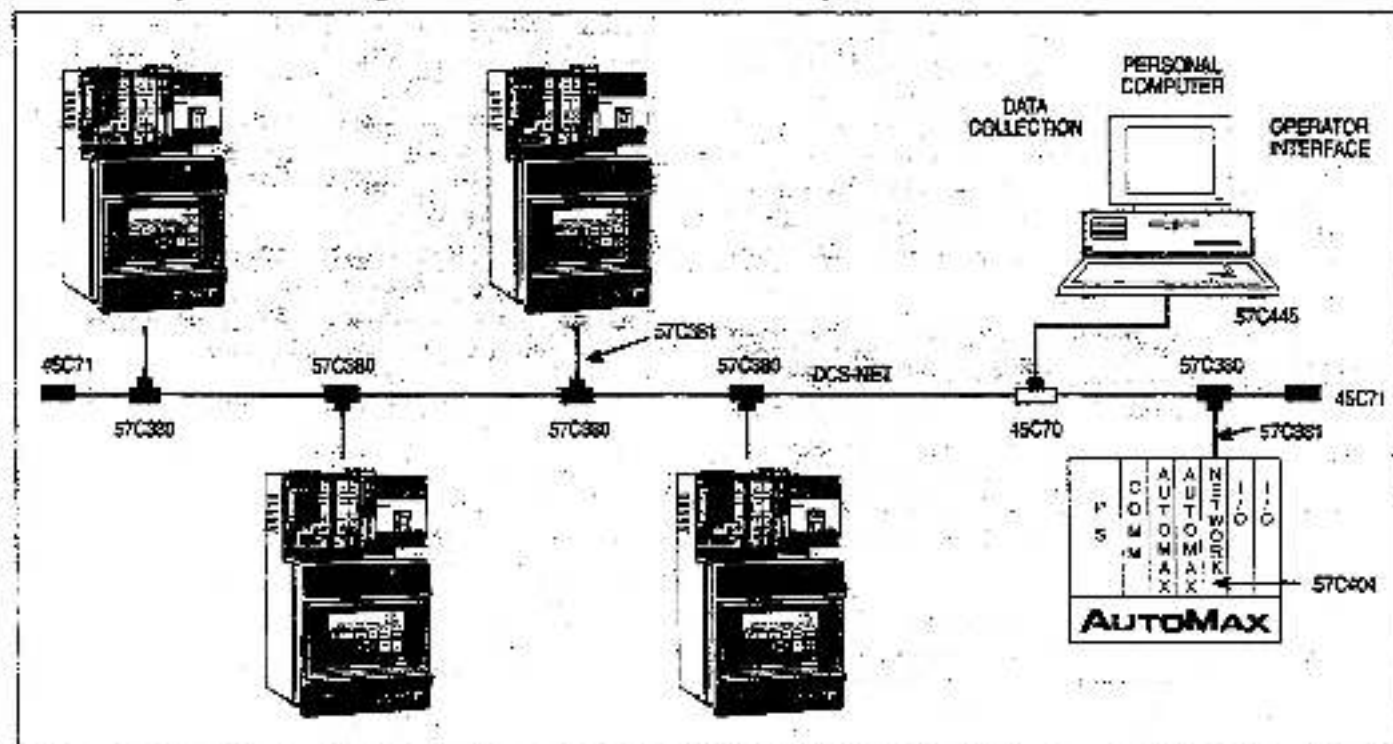   option card

NETWORK SETUP

The setup of the network card requires only the following parameters to be set-up to begin operation.

Parameter Description	Setting
Drop number (P.900)	(1–55)
Network Connection type (P.910)	Basic/Full
Special feature parameters:	
Control Source assignment	(keypad, terminal block, serial ports or network)
Communication loss response	(Coast, DB stop, last reference, terminal block input)
Reference select	(0=direct, 2=broadcast)

Many other parameters are available for customization to your application. Please refer to instruction manual D2-3318 and the AutoMax programming manuals for more information.

AutoMax System Utilizing FlexPak 3000 and Network Option Board

Note: This material is not intended to provide operational instructions. Appropriate Reliance Electric Industrial Company instruction manuals and precautions should be studied prior to installation, operation, or maintenance of equipment.

Rockwell Automation
Reliance Electric