M2000 Programmable Servo Controller

D124-040

Expandable I/O Eurocard (Moog E127) Format

2 Independent Axes of Configurable Loop Closure

Real-time Function Block Structure

On-board Sequencing and Motion Generation

Features:

➲ Real-time function blocks

➲ User defined control loop structures

➲ PC based programming interface

➲ Built in Motion Control Language (MCL)

➲ Trajectory generator for smooth motion

➲ Error detection and shutdown system

➲ On line control loop tuning
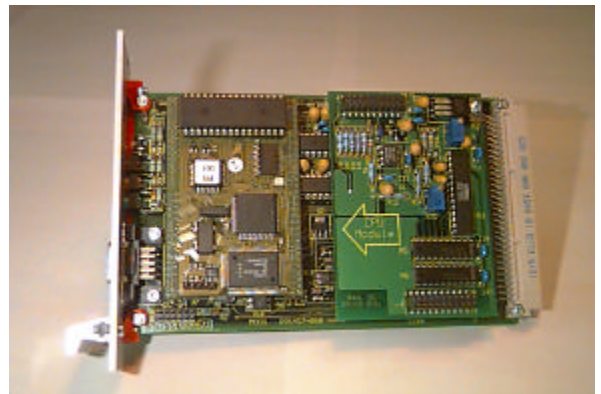
Description

The New Generation Programmable Servo Controller (PSC2) is a 2 axis processor based digital loop closure card in Single Eurocard format. Input/Output pins are compatible with Moog's G127 series of electronic control cards providing a wide range of I/O options. **The real-time 'Function Block'** approach to controller design means that the PSC2 can replace traditional analogue control circuits in many servo control situations. Additional functions which usually require many circuit boards are available on only one card and can be rapidly configured using the user friendly PC based programming interface**. Machine axis sequencing** and motion generation is possible via the easy to program on-board Motion Control Language (MCL).

Applications

➲ Hydraulic and Electric servo drives

➲ High speed axis sequencing

➲ Position/ Speed/ Force Control

➲ Multi-axis Host->PSC systems

➲ Advanced control loop closure

➲ 16 Bit Resolution, > 1kHz Sample Time

Note:

i)   The PSC2 is a complex product requiring user application configuration and programming. Moog product training is recommended.

ii)   The PSC User's Manual (Part No B95604-001) should be ordered as a separate item and includes a copy of the Engineering User Interface (EUI Version4) for PC based Programming and Commissioning.

Electrical Specification

Valve Drive Output: 2 x 16 bit, ± 10V, ± 10mA, 20mA and ± 50mA Options jumper selectable.

Analog Input Range: 6 x 16 bit inputs ±10v Standard.

Optional +/-5, 10, 15V, 0-10V, 0-5V, 0-20mA link selectable options and 2nd order noise filtering via D124-041 Carrier Module.

Logic Input: 4 opto-isolated inputs, 24V nominal.,

Logic Output: 4 opto-isolated outputs 24V nominal, 50mA current sink, external pull up only.

Power Requirements: + 5 V @ 500mA, +/- 15V@180mA. (without external loads).

RS232 Comms: 9 pin D Type Moog Set Up Protocol.

RS485 Comms: Multidropped Moog Protocol Sync Link for host comms.

RS232 to RS485 Converter required.

CAN Bus for High Speed Host and PC to PC Comms**.**

Expansion Hardware Available: Digital I/O and Analog Conditioning using the D124-041 Carrier Module.

Software Functions

Standard Real time Function Blocks: (executable at typically > 1000Hz sample frequency)

- 4	Summing junctions (4 Input)
- 6	Limiters (3 input)
- 26	S/W Amplifiers (P, PID, High/Low Pass etc).
- 4	Ratio blocks
- 2	Trajectory generators (motion profiles)
- 2	Waveform generators (sine, sq, tri)
- 4	Control error monitors
- 16	Comparators (min, max. or window)
- 16	Flag handlers
- 3	Data loggers
- 4	Non-linear tables
- 3	MCL program interpreters
3x64	User Parameters

Motion Control Language: supports Motion

Generator, Timing instructions, Parameter Test/Set, Logical and arithmetic expression handling and program flow instructions e.g. IF-THEN-ELSE, GOSUB etc. Two programs (1 per axis) for axis sequencing, plus a third program for general logic sequencing activities.

PSC Control Structure

Typical User Application Configuration

The PSC 'Move Time' Motion Generator
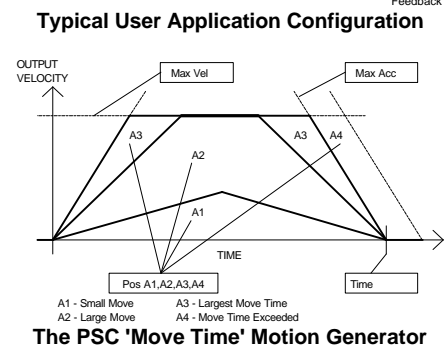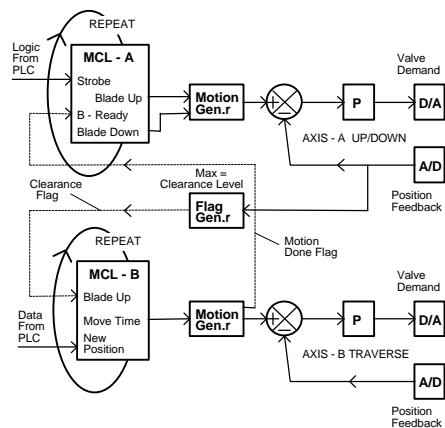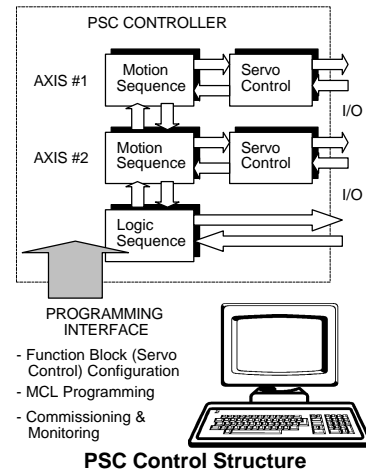
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