HSL-4XMO-CG-N, HSL-4XMO-CD-N

4-axis Pulse Train Motion Control Modules



General Features

- HSL communication protocol
- Transmission speed selectable: 3/6/12 Mbps
- Support for half/full duplex mode
- On-board DSP
- 4-axis pulse train output channels
- Up to 60 axes on a single HSL Network
- Motion point table management
- Motion script download (G-Code-Like Language)

Notes:

1. HSL-4XMO-CG-N provides general-purpose interface for connection. Steppers, linear motors, and other pulse train amplifiers can be easily connected.
2. HSL-4XMO-CD-N provides D-sub interface for connection. Servo motors with a transfer cable can be easily connected.

Motion Control Features

- Pulse train frequency up to 6.55 MHz
- Point-to-point motion
- 13 home return modes
- 4 axes high-speed position counter latches
- Dedicated motion I/O: EL, ORG, INP, RDY, SVON, ERC, and ALM
- Pulse output options: OUT/DIR, CW/CCW, AB phase
- 2 to 4 axes linear interpolation
- 2 axes circular interpolation
- Multi-axis continuous interpolation
- Position/Speed change on-the-fly
- 13 home return modes and auto home search
- Hardware position compare and trigger
- High speed position latch function
- Programmable acceleration and deceleration time
- Trapezoidal and S-curve velocity profiles
- 28-bit up/down counter for incremental encoder
- Hardware backlash compensator
- Software limit function
- Easy interface to any stepping motors, AC or DC servo, linear or rotary motors
- All digital inputs and outputs are 2500 V_{RMS} isolated
- Point table management up to 2000 sets

General Introduction

4-axis Pulse Train Control Modules

ADLINK HSL-4XMO-CG-N and HSL-4XMO-CD-N are 4-axis pulse train motion control modules based on the HSL bus. The HSL bus provides a cost-effective distribution solution which reduces wiring and saves space compared to traditional PCI boards. One HSL bus can support up to 60 axes pulse train motion controllers. The HSL-4XMO series also offers point table management which can reduce move points in the module and provide movement without consuming CPU resources.

Velocity and Position Override

The HSL-4XMO provides powerful position and speed changing function while axis is moving. After motion begins, target of speed or position can be changed on-the-fly at the user's discretion.

Linear & Circular Interpolation

In multi-axis operation, the HSL-4XMO provides linear interpolation by any 2, any 3, or even all 4 axes. Any 2 axes can also perform circular interpolation.

Continuous Contouring

The pre-register architecture of HSL-4XMO offers the feature to build the continuous interpolation function, where the second motion may follow previous motion instantly without latency. Thus perfect velocity continuity can be established.

Hardware Position Compare and Trigger Output

The HSL-4XMO provides position compare and trigger functions. The CMP channel will output a trigger pulse when encoder counter reaches the compared value preset by the user. Comparison is done by hardware and virtually no CPU the resource is needed.

Automatic Backlash Compensation

Whenever direction change occurs, the HSL-4XMO outputs backlash corrective pulses before sending commands. During interpolation mode, this function will be ineffective.

13 Home Return Modes

To fit into various mechanical design and operating restrictions, the HSL-4XMO provides 13 home moving modes for users to choose from.

Specifications

Slave ID Consumption	4
Number of Controllable Axes	4
Maximum Number of HSL-4XMO in Single HSL Network	15 (60 axes)
Position Range	Pulse output is programmable to be OUT/DIR or CW/CCW
	28-bit up/down counter for encoder feedback signal
	-134,217,728 to +134,217,727 pulses (28-bit)
General-purpose Input Type	NPN jumper selectable
General-purpose Input Voltage	ON: 6.5 V to 24 V
	OFF: 0 to 3 V
General-purpose Output	N for NPN sinking type output
General-purpose Output Current	±90 mA (max.)
Power Supply	22 VDC to 26 VDC
Power Consumption	8 W
CE Certification	√

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