LSI3123A

3-axis Quadrature Encoder Counter Card

Features

- High noise immunity with photo-coupler isolation
- 1 MHz max. Quadrature input rate
- Three 32-bit counters
- Quadrature, pulse/direction and up/down counting
- Programmable multiple rate at x1, x2, x4
- Load preset value to counter by external trigger or software trigger
- Latch counter value by external trigger
- Build-in touch probe interface
- Multiple counter reset (homing) modes
- LED on touch probe flashes at hardware synchronized with probe activity status
- Supports DIN rail mounted wiring board
- Fast coordinate rebuilt at power on (for Accurite® linear scale) (LSI3123A only)

Introduction

LSI3123/A card is used for versatile application in PC based control. It integrates 3 axes (channels of encoder or linear scale) counter and a specific external trigger (from touch probe, like Renishaw)input in one card with FPGA chip and provide Photo-coupler isolation in each phase input. Low cost and high performance result in this card makes a better choice in the application of servo control feedback, 3D measuring system and CCD inspection applications may be especial concerned.

Dll and Driver are provided for WinXP, Win7 and later or LINUX platform and sample programs come with VB source code.

Specifications (With Matched Wiring Board)

- Photo-coupler Isolation Voltage : 2500Vac 1min
- Isolation Resistance : 100M Ohm(min)1000Vdc
- Counter Length : 32-Bit
- Card ID : 4-bit
- Input Channel : 3 channels X, Y, Z, totally 3 compatible device units can be hooked
- Input Signal Type : photo-coupler isolated single-end input
- Input Pulse multiple Rate : x1, x2, x4 programmable (quadrature signal only)
- Maximum quadrature input frequency : 1MHz @x1, 1MHz @x2, 1MHz @x4
- Input Mode : (QUADRATURE), (CLOCK/ DIRECTION), (UP CLOCK / DOWN CLOCK)
- Latch Input : 2 for external trigger to latch counter data to buffer (one specific, one may use as general purpose input)
- Homing (Reset) Counter Method : one software trigger mode and four H/W trigger mode
- Polarity : all input signals are software programmable
- Operation Temperature: 0 °C ~ +70 °C
- Operation Humidity : 5~95% RH, non-condensing
- Dimension : 130(W)*102(H)mm, 5.2(W)*4.1(H)in

Pin Assignments

JF1

EXTG	25	13	PROBE_LED_OUT
EXTG	24	12	FOOT_SW_IN
EXTG	23	11	TOUCH_PROBE_IN
EXTG	22	10	Z_C
EXTG	21	9	Z_B
EXTG	20	8	Z_A
EXTG	19	7	Y_C
EXTG	18	6	Y_B
EXTG	17	5	Y_A
+12Vin Optional	16	4	X_C
-12Vin Optional	15	3	X_B
+5Vin	14	2	X_A
		1	+5Vin

Applications

- Industrial automation
- Event counting
- Frequency counter
- Pulse signal receiver / display
- Renishaw probe as external-trigger to latch position
- Linear Scale F/B
- Servo encoder F/B
- CCD inspection F/B

Software Support

➤PC OS Support

WinXP, Win7 and later or Linux O.S.
Embedded XP, Win CE (at request)

➤Library

DLLs, VI library

➤Develop Software

Visual C++, Visual Basic,
Borland C/C++ Builder, LabVIEW etc

➤Example Source Code

Visual Basic

Ordering Information

➤**LSI3123A :** 3-axis Quadrature Encoder Counter Card (High noise immunity with photo-coupler isolation, Accurite linear scale absolute coordinate mode)

➤**ADP3123DIN :** DIN rail mounted wiring board for LSI3123A, differential to single-end P.45

➤**JS51050 :** DIN rail mounted dummy wiring board (D type 25P male to terminals) for JF1 I.12

➤**M270325X4 :** D type 25P male-female cable 1.5M for JF1 I.17

➤**M270325X4S :** D type 25P male-female cable 1.5M, shielding for JF1 I.17

➤**M270325X0 :** D type 25P male-female cable 3.0M for JF1 I.17

➤**M270325X0S :** D type 25P male-female cable 3.0M, shielding for JF1 I.17

Application Tips

Fast coordinate rebuilt at power on

In almost linear scale application, when control looses power or is turned off, the machine could move without detection. When power is restored, the operator is again instructed to find home. If a scale with "distance encrypted reference marks", the position can be rebuilt at minimum movement in stead of moving to the fixed reference point.

LSI3123A an customer-ordered version to have fast coordinate rebuilt function with assigned linear scale.

Contact us : control.cards@automation.com.tw

Note