



## I-9093

3-axis High-speed Encoder Module with Compare Trigger Output

### Features

- 3-axis, 32-bit Encoder Counter
- Maximum Counting Rate: 6 MHz
- Encoder Input: A, B, C Differential
- Encoder Mode: Quadrant, CW/CCW, PULSE/DIR
- Compare Trigger Output
- Selectable Reset/Latch Signal Inputs
- 4 kV ESD Protection
- Wide Operating Temperature Range: -25 to +75°

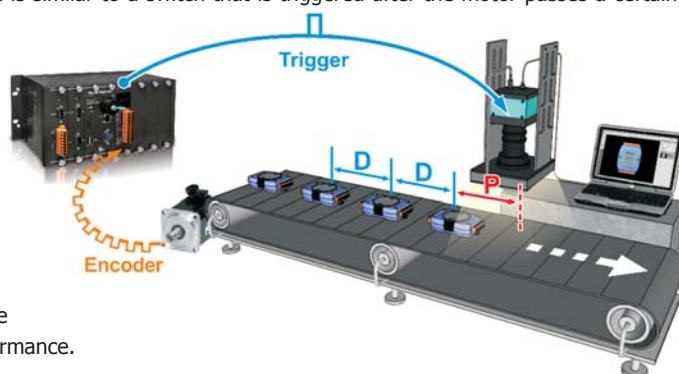


### Introduction

I-9093 includes 3-axis encoder with compare trigger output function. It can generate a periodic trigger signal when the motor reaches a specified position. The specified position is called a breakpoint and is similar to a switch that is triggered after the motor passes a certain position. To use the compare trigger output function, you have to set an initial point (P) and a trigger period of the following points (D).

The trigger signal is an I/O line that can be used to fire another device. For example, when a motor reaches a certain position, the trigger signal can be used to fire the shutter of a camera to capture an image for the defect detection.

All operations of position compare and trigger pulse output are automatically done by the hardware circuit. There is no software calculation effort when the system is operating. I-9093 makes the system design simpler, and significantly increases the system performance.



### Applications

- Data acquisition operation
- Image capture
- Optical inspection line-scan systems
- Position Measure

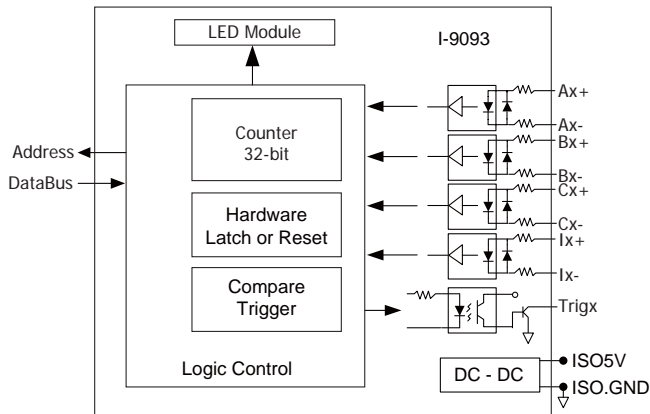
### System Specifications

Model	I-9093
<b>LED Display</b>	
System LED Indicator	1 LED as Power Indicator /12 LED as Status Indicator
<b>Isolation</b>	
Intra-module Isolation, Field to logic	3000 VDC
<b>EMS Protection</b>	
ESD(IEC 61000-4-2)	±4 kV Contact for Each Terminal ±8 kV Air for Random Point
<b>Power</b>	
Power Consumption	2 W Max.
<b>Mechanical</b>	
Dimensions (L x W x H)	144 mm x 30.3 mm x 134 mm
<b>Environment</b>	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-40 ~ +85°C
Humidity	10 ~ 90% RH, Non-condensing

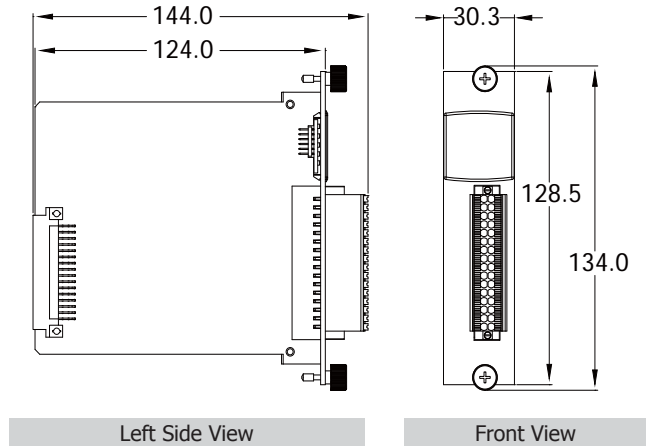
### I/O Specifications

Model		I-9093
Encoder Input		
Encoder Axis		3
Encoder Counter		32-bit
Encoder Mode		Quadrant , CW/CCW , Pulse/Dir
ON Voltage Level		+3.5 VDC ~ +5 VDC Or 10 VDC ~ 24 VDC(Jumper Select)
OFF Voltage Level		+0.8 VDC Max.
Max. Speed	Quadrant	2 MHz Max.
	CW/CCW	6 MHz
	Pulse/Dir	6 MHz
Programmable Digital Filter		1 ~ 250 μs
A/B/C signal isolation		2500 VDC
Latch/Reset Input		
Channel		3
ON Voltage Level		+3.5 VDC ~ +5 VDC Or 10 VDC ~ 24 VDC (Jumper Select)
OFF Voltage Level		+0.8 VDC Max.
Trigger Output		
Channel		3
Trigger Pulse Width		10 uS~ 128 uS
Load Voltage		5 ~ 48 V
Max Load Current		100 mA

## Internal I/O Structure



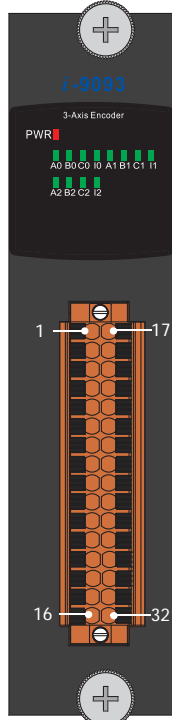
## Dimensions (Units: mm)



## Wire Connections

Output Type	ON State Readback as 1	OFF State Readback as 0
Drive Relay	Relay ON 	Relay OFF 
Resistance Load		
Input Type	ON State LED ON Readback as 1	OFF State LED OFF Readback as 0
Relay Contact	Relay ON 	Relay OFF 
TTL/CMOS Logic	Voltage > 4 V 	Voltage < 0.8 V 
NPN Output	Open Collector ON 	Open Collector OFF 
PNP Output	Open Collector ON 	Open Collector OFF 

## Pin Assignments



Pin Assignment	Terminal No.	Pin Assignment
A0+	01	17 A0-
B0+	02	18 B0-
C0+	03	19 C0-
I0+	04	20 I0-
Trig0	05	21 ISO.GND
A1+	06	22 A1-
B1+	07	23 B1-
C1+	08	24 C1-
I1+	09	25 I1-
Trig1	10	26 ISO.GND
A2+	11	27 A2-
B2+	12	28 B2-
C2+	13	29 C2-
I2+	14	30 I2-
Trig2	15	31 ISO.GND
ISO5V	16	32 ISO.GND

32-pin Connector

## Ordering Information

I-9093-G CR

3-axis High-speed Encoder Module with Compare Trigger Output (Gray Cover) (RoHS)