



## Features

- 3-Axis Encoder Inputs
- 1 MHz Input Rate
- 32-bit Count Range
- Quadrant, Pulse/Dir, CW/CCW
- 2500 Vrms Optical Isolation
- Built-in Virtual Battery Backup for I-7083B(D)
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



## Introduction

The I-7083 and I-7083B are 3-axis high speed encoder modules. Each axis on the module can be independently configured as one of Quadrant, Pulse/Dir or CW/CCW input mode with a maximum input rate of 1 MHz. The high-end specifications of the I-7083/I-7083B and complete software support make it ideal for a wide range of applications in position measurement of motion systems working in industrial and laboratory environments. The I-7083B is an improved version of I-7083 with virtual battery backup function for counter value.

## System Specifications

Model	I-7083	I-7083B	I-7083D	I-7083BD
Communication				
Interface	RS-485			
Bias Resistor	No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.)			
Format	N, 8, 1			
Baud Rate	1200 to 115200 bps			
Protocol	DCON			
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
LED Indicators/Display				
System LED Indicator	Yes, 1 as Power/Communication Indicator			
I/O LED Indicators	-			
5-digit LED Display	-		Yes	
Isolation				
Intra-module Isolation, Field-to-Logic	3000 Vdc			
EMS Protection				
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal			
EFT (IEC 61000-4-4)	±4 kV for Power Line			
Surge (IEC 61000-4-5)	-			
Power				
Reverse Polarity Protection	Yes			
Input Range	+10 ~ +30 Vdc (non-regulated)			
Consumption	1.5 W Max.		1.7 W Max.	
Mechanical				
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
Environment				
Operating Temperature	-25 to +75°C			
Storage Temperature	-30 to +80°C			
Humidity	10 to 90% RH, Non-condensing			

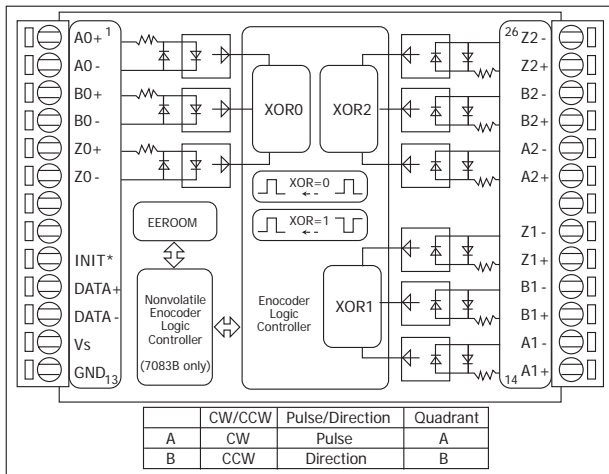
## Applications

- Building Automation
- Machine Automation
- Remote Diagnosis
- Factory Automation
- Remote Maintenance
- Testing Equipment

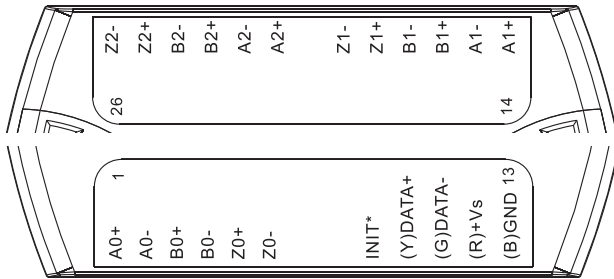
## I/O Specifications

Model	I-7083	I-7083D	I-7083B	I-7083BD
<b>Digital Input</b>				
Channels	3-axis			
Contact	Wet			
Sink/Source (NPN/PNP)	Sink			
Resolution	32-bit			
Max. Speed	1 MHz			
On Voltage Level	5 V: +3.5 ~ +5 Vdc 12 V with 1 kΩ External Resistor: +5 ~ +12 Vdc 24 V with 2 kΩ External Resistor: +7 ~ +24 Vdc			
Off Voltage Level	+2 VDC Max.			
Encoder Mode	CW/CCW, Pulse/Dir, AB Phase			
Virtual Battery Backup for Counter Value	-		Yes	

## Internal I/O Structure



## Pin Assignments



## Wire Connections

Input Type	ON State Readback as 1	OFF State 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 ON
PNP Output	Open Collector ON	Open Collector ON

## Ordering Information

I-7083-G CR	3-axis, 32-bit Encoder Counter (Gray Cover) (RoHS)
I-7083D-G CR	3-axis, 32-bit Encoder Counter with LED Display (Gray Cover) (RoHS)
I-7083B-G CR	3-axis, 32-bit Encoder Counter (Gray Cover) (RoHS)
I-7083BD-G CR	3-axis, 32-bit Encoder Counter with LED Display (Gray Cover) (RoHS)

## Accessories

	tM-7520U CR	RS-232 to RS-485 Converter (RoHS)
	tM-7561 CR	USB to RS-485 Converter (RoHS)
	tM-SG4 CR	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)
	I-7514U CR	4-channel RS-485 Hub (RoHS)
	SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)
	SG-3000 Series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers