

I-87084W

4/8-ch Counter/Frequency/Encoder Input Module

Features

- 8 Up Counter/Frequency or 4 Encoder Input Channels
- Programmable Digital Filter
- Isolated or Non-isolated Input
- 32-bit Counter
- Individual Channel Configuration
- Virtual Battery Backup to Preserve Counter Values
- Maximum Frequency of up to 1 MHz
- Preset Values for Counter Input

Introduction

The I-87084W is a 32-bit high-speed Counter/Frequency/Encoder input module that offers a variety of mode options, including "Up Counter", "Frequency Input", "Up/Down Counter", "Direct/Pulse Counter" and "A/B Phase Counter" modes. The mode combinations can be individual set for all 8 channels, where some channels can be set to "Up Counter" mode and other channels can be simultaneously set to "Frequency", "Up/Down Counter" or "Encoder input" mode. The built-in digital filter is valid for both non-isolated and isolated and can fi lter out noise where the high/low pulse width is smaller than the minimum high/low width of the digital filter. The I-87084W provides a virtual battery backup function in counter mode, and isolated or non-isolated mode is jumper-selectable.

System Specifications

COM Ports	
Port	RS-485
Data Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON
CPU Module	
Dual Watchdog	Module (1.6 Seconds), Communication (Programmable)
LED Indicators	
System LED Indicator	1
I/O LED Indicator	8
Isolation	
Intra-module Isolation, Field-to-Logic	2000 VDC
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal, ±8 kV Air for Random Point
Power	
Consumption	0.6 W
Mechanical	
Dimensions (W x L x H)	30 mm × 115 mm × 102 mm
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 95 % RH, Non-condensing

I/O Specifications

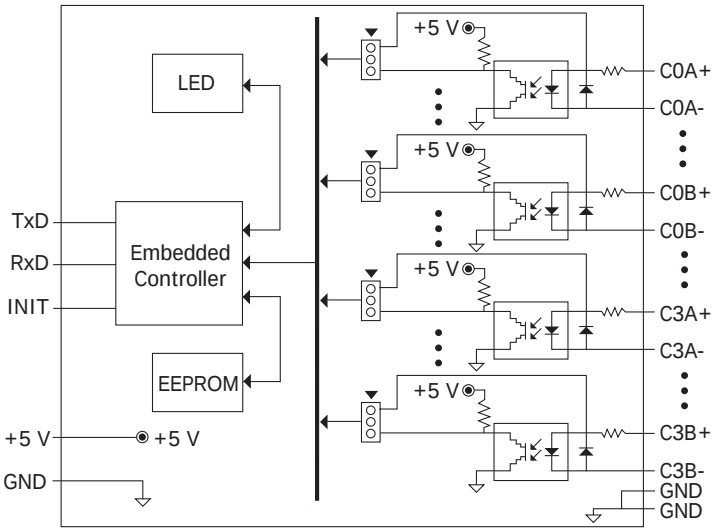
Counter/Frequency/Encoder Input		
Channels		4-ch Up/Down Counter (CW/CCW) 4-ch Dir/Pulse Counter (Bi-direction) 4-ch A/B Phase (Quadrant Counting) 8-ch Up Counter 8-ch Frequency
Contact		Wet
Sink/Source (NPN/PNP)		Sink
Counter/Encoder-bits		32-bit (4, 294, 967, 295)
ON Voltage Level	Isolated	+3.5 VDC ~ +30 VDC
	Non-isolated	+2.4 VDC ~ +5 VDC
OFF Voltage Level	Isolated	+1 VDC Max.
	Non-isolated	+0.8 VDC Max
Programmable Digital Filter		1 ~ 32767 μs
Individual Channel Configuration		Yes
Counter Mode		Up or Up/Down
Encoder Mode		CW/CCW, Dir/Pulse, AB Phase
Frequency Mode		Yes
Max. Speed	Isolated	3.5 VDC ~ 10 VDC: 200 kHz 10 VDC ~ 30 VDC: 150 kHz
	Non-isolated	1 MHz
Frequency Accuracy		1 k ~ 200 k Hz = ±0.025 % of Input Frequency (Note1) 200 k ~ 1 M Hz = ±0.1 % of Input Frequency
Virtual Battery Backup to preserve Counter Values		Yes

Note

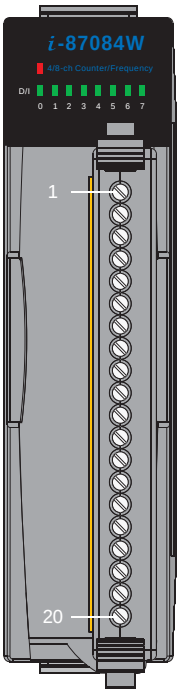
Frequency Range	Freqency Error (Typical)
1 ~ 10	0.01 Hz
10 ~ 10 K	0.5 Hz
10 K ~ 100 K	15 Hz
100 K ~ 200 K	30 Hz

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Internal I/O Structure



Pin Assignments



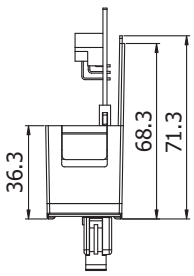
Terminal No.	Pin Assignment
01	C0A+
02	C0A-
03	C0B+
04	C0B-
05	C1A+
06	C1A-
07	C1B+
08	C1B-
09	C2A+
10	C2A-
11	C2B+
12	C2B-
13	C3A+
14	C3A-
15	C3B+
16	C3B-
17	GND
18	GND
19	N.C
20	N.C

Wire Connections

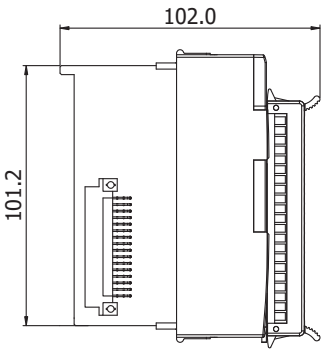
Counter Type	Isolated	Non-Isolated
Dir/Pulse	Pulse+, Pulse -, Dir+, Dir - → CxA+, CxA-, CxB+, CxB-	Pulse+, Dir+, Pulse - & Dir - → CxA+, CxB+, GND
Up/Down	Up+, Up -, Down+, Down - → CxA+, CxA-, CxB+, CxB-	Up+, Down+, Up - & Down - → CxA+, CxB+, GND
UP	Up0+, Up0 -, Up1+, Up1 - → CxA+, CxA-, CxB+, CxB-	Up0+, Up1+, Up0 - & Up1 - → CxA+, CxB+, GND
A/B Phrase	A0+, A0 -, B0+, B0 - → CxA+, CxA-, CxB+, CxB-	A0+, B0+, A0 - & B0 - → CxA+, CxB+, GND

Frequency Type	Isolated	Non-Isolated
Frequency	Freq0+, Freq0 -, Freq1+, Freq1 - → CxA+, CxA-, CxB+, CxB-	Freq0 -, Freq1 -, Freq0 - & Freq1 - → CxA+, CxB+, GND

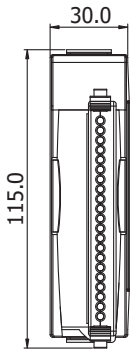
Dimensions (Unit: mm)



Top View



Left View



Front View

Ordering Information

I-87084-G CR	4/8-channel Counter/Frequency/Encoder Module (RoHS)

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