



M-2224CI M-2228CI

Channel to Channel Isolation 4/8-channel differential analog Outputs

Features

- M-2224CI: 4-channel differential analog outputs
- M-2228CI: 8-channel differential analog outputs
- Current, Voltage Output
- Open Wire Detection for Current Output
- RF Immunity
- Short Circuit Protection
- Dual Watchdog

Introduction

The M-2224CI/ M-2228CI is a 4-channel/ 8-channel analog differential output module with 3000 VDC channel-to-channel isolation. It provides a programmable output range on all analog output channels (0 ~ 5 V, 0 ~ 10 V, +4 ~ +20 mA or 0 ~ +20 mA). Each analog output channel can be configured for an individual range and provides an RF immunity level matching that defined by the IEC 61000-4-3 standard. The module also features per-channel open wire detection for +4 ~ +20 mA outputs, together with 4 kV ESD protection as well as 3000 VDC intra-module isolation. Options for configuring power-on and safe values are also included.

System Specifications

Module	M-2224CI	M-2228CI
CPU Module		
CPU	32-bit ARM	
Watchdog Timer	Module, Communication (Programmable)	
Isolation		
Intra-module Isolation	3000 VDC	
EMS Protection		
EFT (IEC 61000-4-4)	±4 kV for Power Line	
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal ±8 kV Air for Random Point	
Surge (IEC 61000-4-5)	±2 kV for Power Line	
LED Indicators		
Status	1 x Power and Communication	
COM Ports		
Ports	1 x RS-485	
Baud Rate	1200 ~ 115200 bps	
Data Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)	
Protocol	Modbus RTU, DCON	
Bias Resistor	10 kΩ	
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +48 VDC	
Consumption	4.6 W Max.	8.8 W Max.
Mechanical		
Dimensions (mm)	33 x 184 x 129 (W x L x H)	
Installation	DIN-Rail Mounting	

Module	M-2224CI	M-2228CI
Environment		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-30 ~ +80 °C	
Humidity	10 ~ 90% RH, Non-condensing	

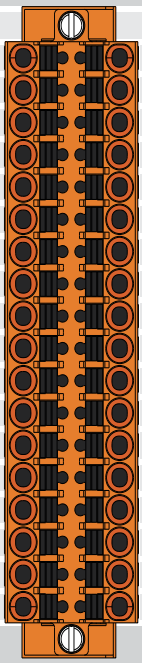
I/O Specifications

Module		M-2224CI	M-2228CI
Analog Output			
Channels		4 Differential	8 Differential
Range	Voltage	0 ~ +5 VDC, 0 ~ +10 VDC	
	Current	0 ~ +20 mA, +4 ~ +20 mA	
Resolution		12-bit	
Accuracy		±0.1% of FSR	
Short Circuit Protection		Yes	
DA Output Response Time		10 ms per channel	
Programmable Output Slope	Voltage	0.0625 ~ 512 V/Second	
	Current	0.125 ~ 1024 mA/Second	
Open Wire Detection		+4 ~ +20 mA	
Current Output Capacity		500 Ω	
Voltage Output Capability		10 V @ 10 mA	
Channel-to-Channel Isolation		3000 VDC	
Power-on Value		Yes	
Safe Value		Yes	

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Pin Assignments

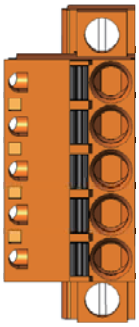
Pin Assignment		Terminal No.		Pin Assignment	
M-2224CI	M-2228CI			M-2224CI	M-2228CI
AO0-	AO0-	02	01	AO0+	AO0+
		04	03		
	AO1-	06	05		AO1+
		08	07		
AO1-	AO2-	10	09	AO1+	AO2+
		12	11		
	AO3-	14	13		AO3+
		16	15		
AO2-	AO4-	18	17	AO2+	AO4+
		20	19		
		22	21		
	AO5-	24	23		AO5+
		26	25		
		28	27		
AO3-	AO6-	30	29	AO3+	AO6+
		32	31		
		34	33		
	AO7-	36	35		AO7+



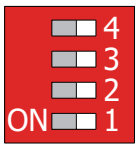
Pin Assignment

M-2224CI-4/M-2228CI

Power Input: +10 ~ +48 VDC

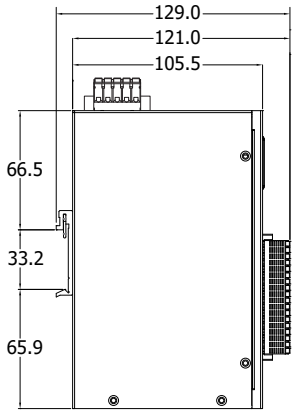


SW2

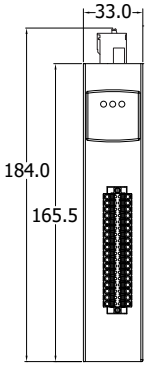


Dimensions (Units: mm)

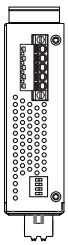
M-2224CI/M-2228CI



Left Side View



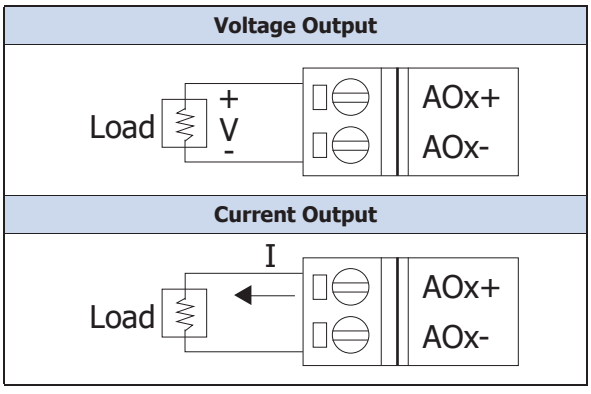
Front View



Top View

Wire Connections

M-2224CI/M-2228CI



Ordering Information

M-2224CI CR	4-ch Channel to Channel Isolation Differential Analog Output Module using the DCON and Modbus Protocols (RoHS)
M-2228CI CR	8-ch Channel to Channel Isolation Differential Analog Output Module using the DCON and Modbus Protocols (RoHS)

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