I-7021 I-7021P

1-channel 12/16-bit, Analog Output Module

Features

- Current or Voltage Output
- High Resolution: 12-bit
- Software Selectable Current or Voltage Output
- Open Wire Detection for Current Output
- Readback Voltage or Current
- Configurable Power-on Value
- Configurable Safe Value
- 3000 VDC Intra-module Isolation
- Programmable Output Slope
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C

Introduction

The I-7021 is a 12-bit and I-7021P is a 16-bit, 1-channel Analog Output module that is designed for both voltage and current output. The I-7021 features 3000 VDC intra-module isolation and the power source for the current output can be selected as either internal or external via a jumper. Options are also provided to allow power-on and safe values to be set. Both support the DCON protocols which can be configured via software.

Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

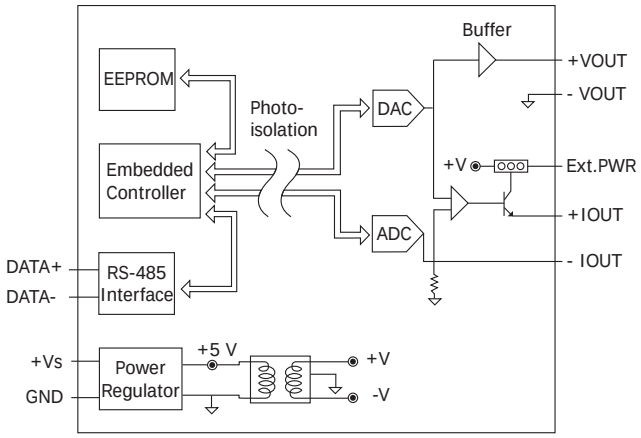
System Specifications

Model	I-7021	I-7021P
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) (N, 8, 2) (E, 8, 1) (O, 8, 1)	(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	-	
7-segment LED Display	-	
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 to Power Line	
Surge (IEC 61000-4-5)	±0.5 kV for Power Line	
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	1.8 W	
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	-40 to +85°C	
Humidity	10 to 95% RH, Non-condensing	

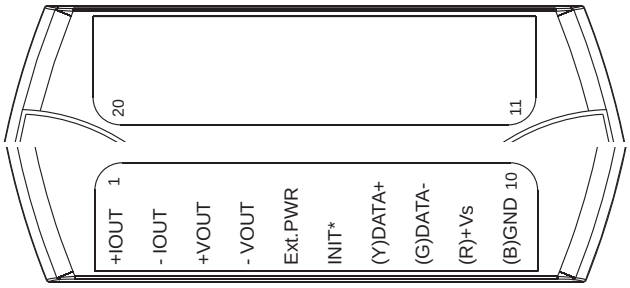
I/O Specifications

Model		I-7021	I-7021P
Analog Output			
Channels		1	
Range	Voltage	0 ~ +10 V,	
	Current	0 ~ +20 mA, +4 ~ +20 mA	
Resolution		12-bit	16-bit
Accuracy		0.1%	0.02%
Readback Accuracy		±0.5% of FSR	
DA Output Response Time		10 ms	
Programmable Output Slope	Voltage	0.0625 ~ 1024.0 V/Second	
	Current	0.125 ~ 2048 mA/Second	
Current Load Resistance		Internal Power: 500 Ω	
		External Power: 1050 Ω	
Open Wire Detection (for current only)		Yes	
Channel-to-Channel Isolation		-	
Short Circuit Protection		Yes	
Power-on Value		Yes	
Safe Value		Yes	

Internal I/O Structure

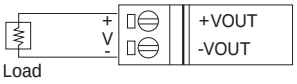


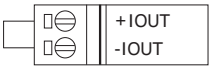
Pin Assignments



Wire Connections

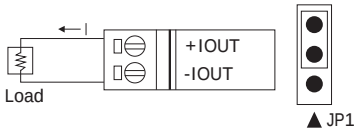
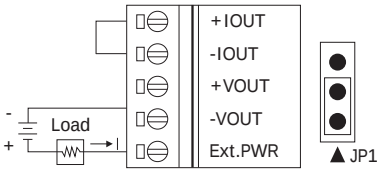
Voltage Output Wire Connection





Note: To have voltage readback,
the +IOUT and -IOUT terminals should be short-circuited.

Current Output Wire Connection

Internal Power	External Power
	

Ordering Information

I-7021 CR	1-channel 12-bit Analog Output Module using the DCON Protocol (Blue Cover) (RoHS)
I-7021-G CR	1-channel 12-bit Analog Output Module using the DCON Protocol (Gray Cover) (RoHS)
I-7021P CR	1-channel 16-bit Analog Output Module using the DCON Protocol (Blue Cover) (RoHS)
I-7021P-G CR	1-channel 16-bit Analog Output Module using the DCON Protocol (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 Bias 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