

**M-7028**

**M-7028D**

8-channel Analog Output Module

**Features**

- 8-channel Analog Output
- Source Type Current Output
- 12-bit Analog Output
- Individual Channel Configuration
- Open Wire Detection for Current Output
- RF Immunity
- 8 kV ESD Protection
- Power-on Value Setting
- Safe Value Setting
- Wide Operating Temperature Range: -25 to +75°C



**Introduction**

The M-7028 is a 12-bit, 8-channel analog output module. It provides a programmable output range on all analog output channels (0 ~ 5 V, +/-5 V, 0 ~ 10 V, +/-10 V, +4 ~ +20 mA or 0 ~ +20 mA). Each analog output channel can be configured for an individual range and the module also features per-channel open wire detection for the +4 ~ +20 mA output, together with 8 kV ESD Protection as well as 3000 VDC intra-module isolation. Options for configuring power-on and safe values are also included.

**Applications**

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

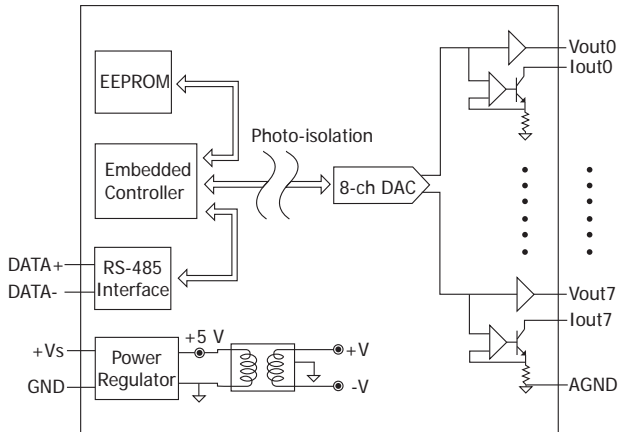
**System Specifications**

Model	M-7028	M-7028D
<b>Communication</b>		
Interface	RS-485	
Bias Resistor	Yes	
Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)	
Baud Rate	1200 to 115200 bps	
Protocol	Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)	
<b>LED Indicators/Display</b>		
System LED Indicator	Yes, 1 as Power/Communication Indicator	
I/O LED Indicators	-	8 LEDs as Analog Output and Fault Indicators
7-segment LED Display	-	
<b>Isolation</b>		
Intra-module Isolation, Field-to-Logic	3000 Vdc	
<b>EMS Protection</b>		
ESD (IEC 61000-4-2)	±8 kV Contact for each Terminal	
RS Immunity (IEC 61000-4-3)	3 V/m, 80 MHz ~ 1 GHz	
EFT (IEC 61000-4-4)	±4 kV for Power Line	
Surge (IEC 61000-4-5)	-	
<b>Power</b>		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 Vdc	
Consumption	4.3 W	4.8 W
<b>Mechanical</b>		
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm	
Installation	DIN-Rail or Wall Mounting	
<b>Environment</b>		
Operating Temperature	-25 to +75°C	
Storage Temperature	-40 to +85°C	
Humidity	10 to 95% RH, Non-condensing	

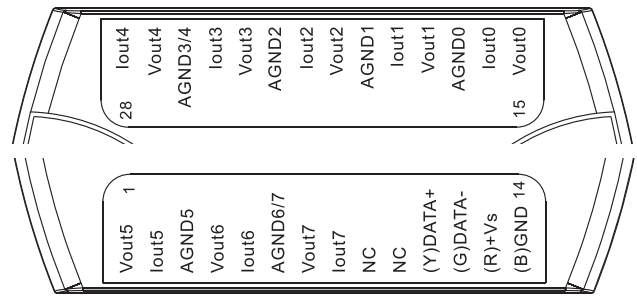
**I/O Specifications**

Model	M-7028	M-7028D
<b>Analog Output</b>		
Channels	8	
Current Output Wiring	Source	
Range	0 ~ +5 Vdc ±5 Vdc 0 ~ +10 Vdc ±10 Vdc 0 ~ +20 mA +4 ~ +20 mA	
Resolution	12-bit	
Accuracy	±0.1% of FSR	
DA Output Response Time	10 ms per channel	
Programmable Output Slope	Voltage	0.0625 ~ 512 V/Second
	Current	0.125 ~ 1024 mA/Second
Current Output Capacity	500 Ω	
Voltage Output Capability	10 V @ 10 mA	
Open Wire Detection	Yes, for the 4 ~ 20 mA output	
Power-on Value	Yes, Programmable	
Safe Value	Yes, Programmable	

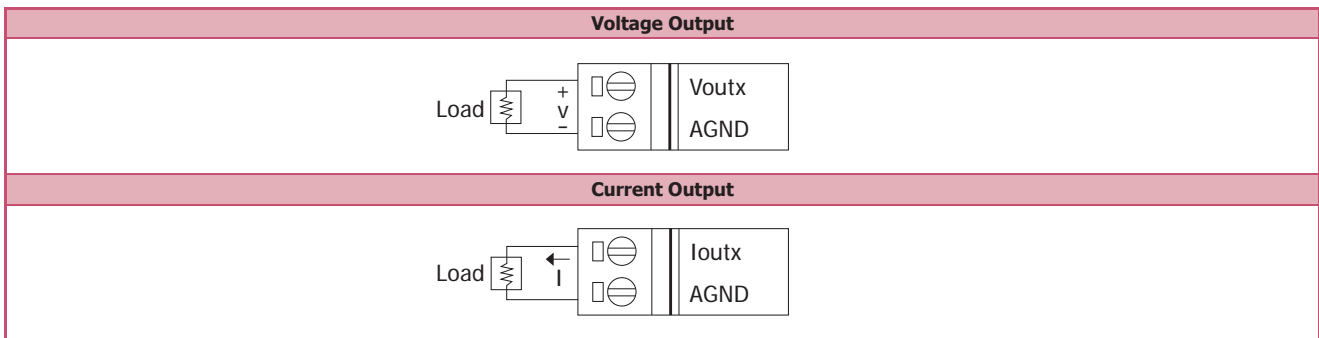
### Internal I/O Structure



### Pin Assignments



### Wire Connections



### Ordering Information

<b>M-7028-G CR</b>	8-channel Analog Output Module using the DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7028D-G CR</b>	M-7028 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 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)

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