



## M-7026

6-channel Analog Input, 2-channel Analog Output,  
3-channel Digital Input and 3-channel Digital Output Module

### Features

- Multifunction (6 AI, 2 AO, 3 DI and 3 DO)
- Supports Fast Mode and Normal Mode
- Individual Channel Configuration
- Open Wire Detection for Current Output
- Overload and Short Circuit Protection for Digital Output
- Configurable Power-on Value Settings
- Configurable Safe Value Settings
- 240 Vrms Overvoltage Protection for Voltage Input
- Jumper Selectable Voltage or Current Input/Output
- Dual Watchdog
- $\pm 4$  kV Contact ESD Protection
- Wide Operating Temperature Range:  $-25 \sim +75^{\circ}\text{C}$



### Introduction

The M-7026 is a multifunction module that includes 6 analog input channels, 2 analog output channels, 3 digital input channels, 3 digital output channels. It provides a programmable input range on all analog input ( $\pm 150$  mV,  $\pm 500$  mV,  $\pm 1$  V,  $\pm 5$  V,  $\pm 10$  V,  $\pm 20$  mA or  $0 \sim +20$  mA), analog outputs are 12-bit at  $\pm 5$  V,  $\pm 10$  V,  $0 \sim +20$  mA or  $+4 \sim +20$  mA and all digital outputs can be set as alarm output. Each analog input can be configured for an individual range and provides a high overvoltage protection of 240 Vrms. Voltage and current inputs/outputs are jumper selectable.

### Applications

- Industrial Automation
- Building Automation
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems
- Industrial Machinery

### System Specifications

Model	M-7026
<b>Communication</b>	
Interface	RS-485
RS-485 Bias Resistor	No (An RS-485 master is required to provide the bias.)
Format	N, 8, 1
Baud Rate	1200 ~ 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 LED as Power/Communication Indicator
I/O LED Indicators	-
7-Segment LED Display	-
<b>Isolation</b>	
Intra-module Isolation, Field-to-Logic	2500 Vdc
<b>EMS Protection</b>	
ESD (IEC 61000-4-2)	$\pm 4$ kV Contact for each Terminal
	$\pm 8$ kV Air for random point
EFT (IEC 61000-4-4)	$\pm 4$ kV for Power Line
Surge (IEC 61000-4-5)	$\pm 3$ kV for Power Line
<b>Power</b>	
Reverse Polarity Protection	Yes
Input Range	$10 \sim 30$ Vdc
Consumption	1.8 W
<b>Mechanical</b>	
Dimensions (W x L x H)	72 mm x 123 mm x 35 mm
Installation	DIN-Rail or Wall Mounting
<b>Environment</b>	
Operating Temperature	$-25 \sim +75^{\circ}\text{C}$
Storage Temperature	$-40 \sim +85^{\circ}\text{C}$
Humidity	$10 \sim 95\%$ RH, Non-condensing

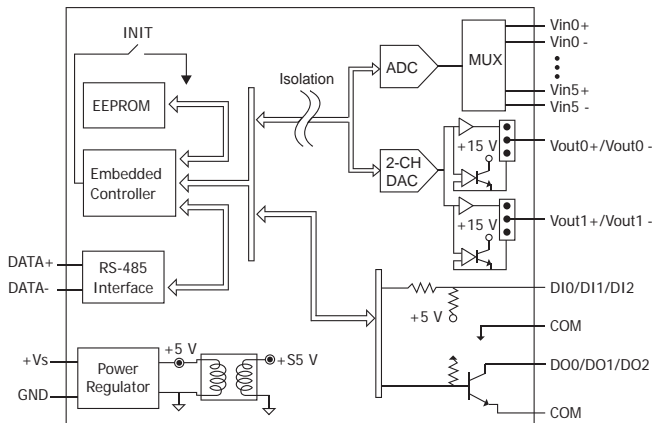
### I/O Specifications

Model	M-7026	
<b>Analog Input</b>		
Channels	6	
Wiring	Differential	
Range	Voltage	$\pm 150$ mV, $\pm 500$ mV, $\pm 1$ V, $\pm 5$ V, $\pm 10$ V
	Current	$\pm 20$ mA, $0 \sim 20$ mA, $4 \sim 20$ mA (Jumper Selectable)
Resolution	16-bit	
Accuracy	Normal Mode	$\pm 0.1\%$ of FSR
	Fast Mode	$\pm 0.5\%$ or better
Sampling Rate	Normal Mode	10 Samples/Sec.
	Fast Mode	60 Samples/Sec. (Total)
Bandwidth	Normal Mode	15.7 Hz
	Fast Mode	78.7 Hz
Input Impedance	Voltage	2 M $\Omega$
	Current	140 $\Omega$
Common Voltage Protection	$\pm 200$ V	
Individual Channel Configuration	Yes	
Overvoltage Protection	240 Vrms	
Overcurrent Protection	Yes, 50 mA at 110 Vdc	
Virtual Channel to Channel Isolation	Yes, 400 Vdc	
Open Wire Detection for $4 \sim 20$ mA	Yes	
<b>Analog Output</b>		
Channels	2	
Range	$+0 \sim +5$ Vdc, $+0 \sim +10$ Vdc, $\pm 5$ Vdc, $\pm 10$ Vdc, $+0 \sim +20$ mA, $+4 \sim +20$ mA (Jumper Selectable)	
Resolution	12-bit	
Accuracy	$\pm 0.1\%$ of FSR	
Output Capacity	10 V @ 20 mA	
Voltage Output Capability		
Open Wire Detection	Yes, for $4 \sim 20$ mA only	
Power-on Value	Yes, Programmable	
Safe Value	Yes, Programmable	

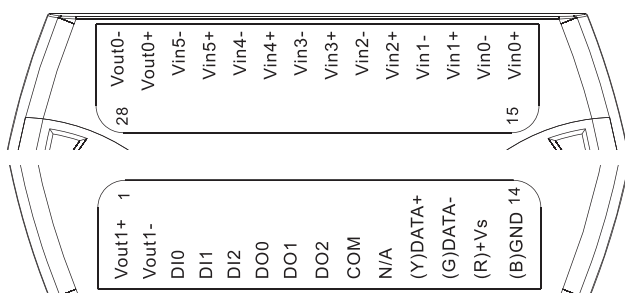
## I/O Specifications

Model	M-7026	
<b>Digital Input/Counter</b>		
Channels	3	
Type	Dry Contact	Source
	Wet Contact	-
Wet Contact	On Voltage Level	-
	Off Voltage Level	-
Dry Contact	On Voltage Level	Close to GND
	Off Voltage Level	Open
Counters	Max. Count	65535 (16-bit)
	Max. Input Frequency	100 Hz
	Min. Pulse Width	5 ms
Input Impedance	-	
Channel-to-Channel Isolation	-	
Overvoltage Protection	-	
<b>Digital Output</b>		
Output Channels	3	
Type	Open Collector	
Sink/Source (NPN/PNP)	Sink	
Load Voltage	+ 3.5 Vdc ~ + 30 Vdc	
Max. Load Current	700 mA/Channel	
Overvoltage Protection	60 Vdc	
Overload Protection	DC	
Short-circuit Protection	Yes	
Power-on Value	Yes, Programmable	
Safe Value	Yes, Programmable	

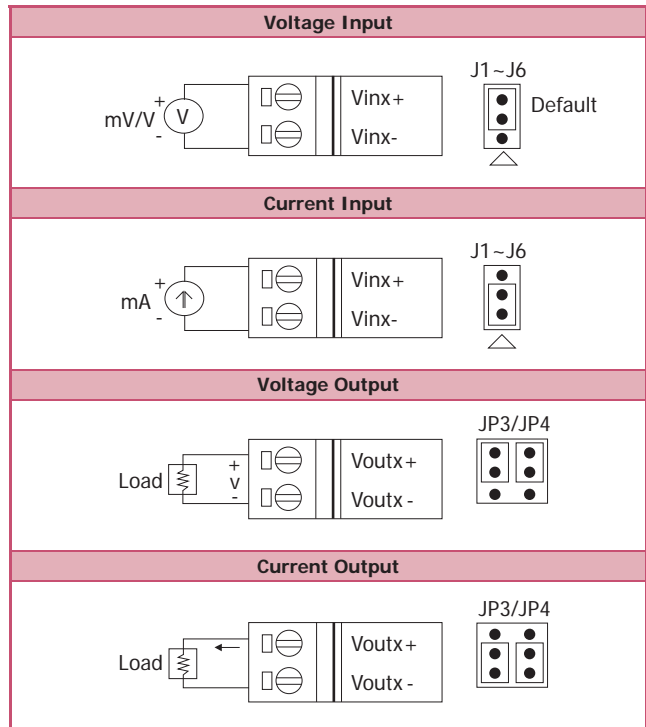
## Internal I/O Structure



## Pin Assignments



## Wire Connections



Digital Input/Counter	ON State Readback as 1	OFF State Readback as 0
Dry Contact (Source)		
Digital Output	ON State Readback as 1	OFF State Readback as 0
Open Collector (Sink)		

## Ordering Information

Art. No. 1' 9) &  
M-7026 CR

6-channel Analog Input, 2-channel Analog Output, 3-channel Digital Input and 3-channel Digital Output Module Using the DCON and Modbus Protocol (Gray Cover) (RoHS)

## Accessories

	tM-7520U CR	RS-232 to RS-485 Converter (RoHS)
	tM-7561 CR	USB to RS-485 Converter (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