



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
- ± 4 kV Contact ESD Protection
- Wide Operating Temperature Range: -25 to +75°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 (± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V, ± 20 mA or $0 \sim +20$ mA), analog outputs are 12-bit at ± 5 V, ± 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
- Food and Beverage Systems
- Control Systems
- Building Automation
- Semiconductor Fabrication
- Industrial Machinery

System Specifications

Model	M-7026
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
Baud Rate	1200 to 115200 bps
Protocol	Modbus RTU, 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	2500 Vdc
EMS Protection	
ESD (IEC 61000-4-2)	± 4 kV Contact for each Terminal
	± 8 kV Air for random point
EFT (IEC 61000-4-4)	± 4 kV for Power Line
Surge (IEC 61000-4-5)	± 3 kV for Power Line
Power	
Reverse Polarity Protection	Yes
Input Range	$+10 \sim +30$ 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

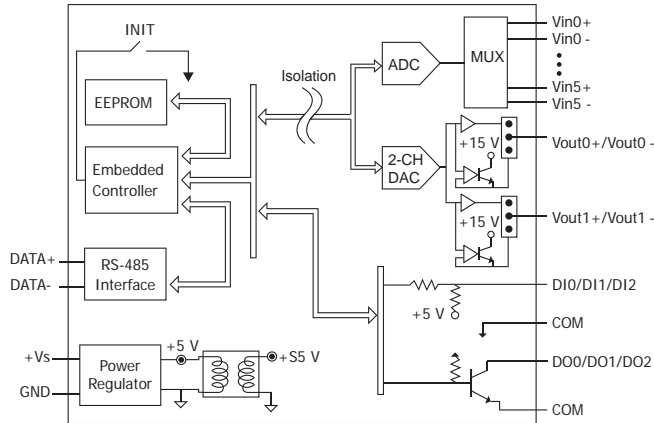
I/O Specifications

Model	M-7026	
Analog Input		
Channels	6	
Wiring	Differential	
Range	Voltage	± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V
	Current	± 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 Ω
	Current	140 Ω
Common Voltage Protection	± 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	
Analog Output		
Channels	2	
Range	$+0 \sim +5$ Vdc, $+0 \sim +10$ Vdc, ± 5 Vdc, ± 10 Vdc, $+0 \sim +20$ mA, $+4 \sim +20$ mA (Jumper Selectable)	
Resolution	12-bit	
Accuracy	$\pm 0.1\%$ of FSR	
Output Capacity Voltage Output Capability	10 V @ 20 mA	
Open Wire Detection	Yes, for $4 \sim 20$ mA only	
Power-on Value	Yes, Programmable	
Safe Value	Yes, Programmable	

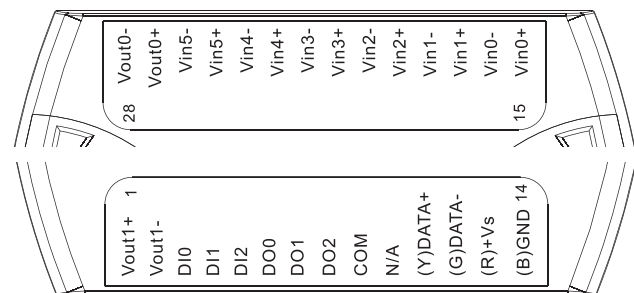
Internal I/O Structure

Model		M-7026
Digital Input/Counter		
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	50 Hz
	Min. Pulse Width	5 ms
Input Impedance		-
Channel-to-Channel Isolation		-
Overvoltage Protection		-
Digital Output		
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

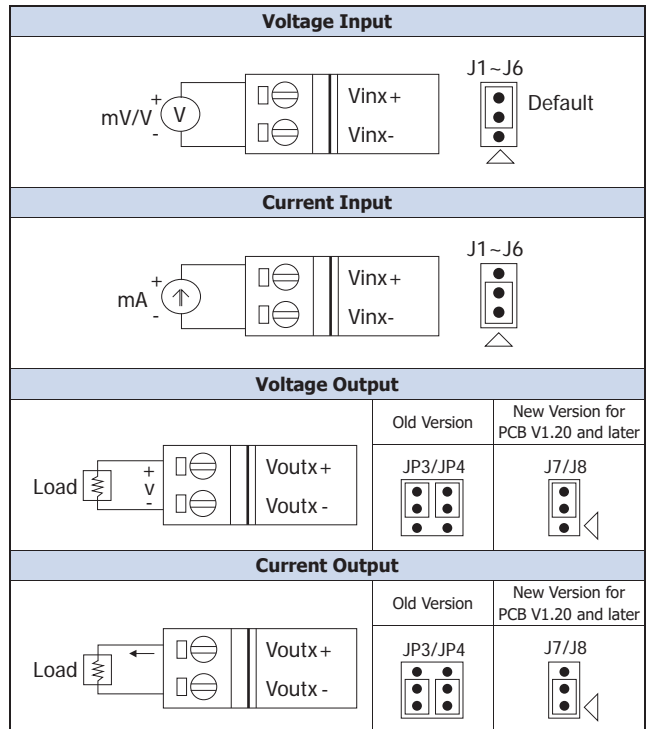
Internal I/O Structure



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

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)
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Accessories

	tM-7520U CR Tiny Isolated RS-232 to RS-485 Converter (RoHS)
	tM-7561 CR Tiny USB to Isolated RS-485 Converter with CA-USB18 Cable (RoHS)
	I-7514U CR Isolated 4-channel RS-485 Repeater/Hub/Splitter (Gray Cover) (RoHS)
	SG-770 CR 7/14 channel Surge Protector (RoHS)
	SG-3000 Series Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers