



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 $+75^{\circ}\text{C}$



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 (± 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 $+75^{\circ}\text{C}$
Storage Temperature	-40 to $+85^{\circ}\text{C}$
Humidity	10 to 95% RH, Non-condensing

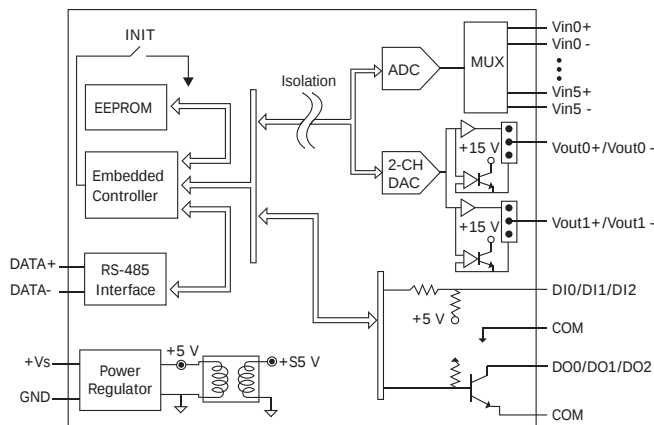
I/O Specifications

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 ~ 20 mA, 4 ~ 20 mA (Jumper Selectable)
Resolution		16-bit
Accuracy	Normal Mode	±0.1% of FSR
	Fast Mode	±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 MΩ
	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 ~ 20 mA		Yes
Analog Output		
Channels		2
Range	+0 ~ +5 VDC, +0 ~ +10 VDC, ±5 VDC, ±10 VDC, +0 ~ +20 mA, +4 ~ +20 mA (Jumper Selectable)	
Resolution		12-bit
Accuracy		±0.1% of FSR
Output Capacity Voltage Output Capability		10 V @ 20 mA
Open Wire Detection		Yes, for 4 ~ 20 mA only
Power-on Value		Yes, Programmable
Safe Value		Yes, Programmable

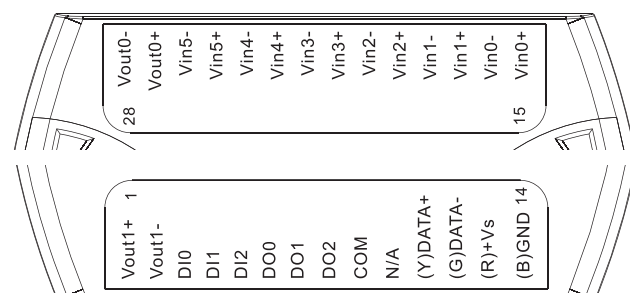
I/O Specifications

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	100 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

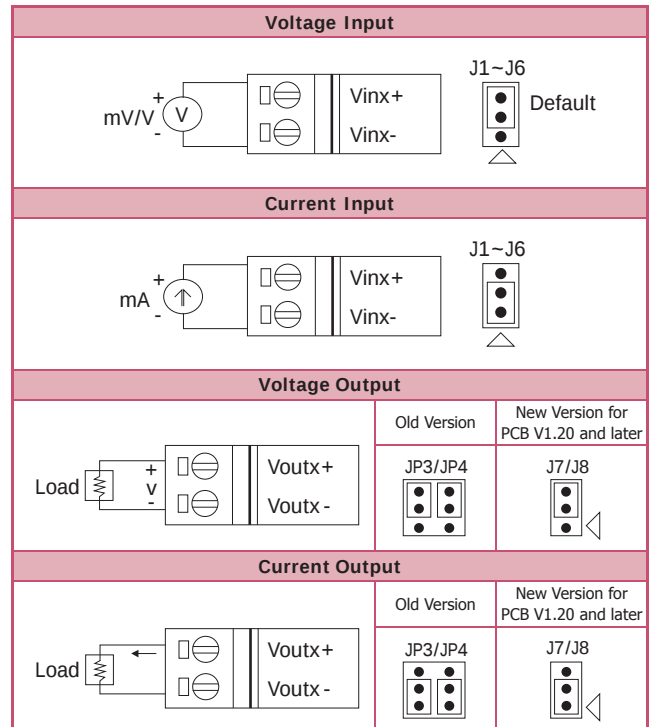
Internal I/O Structure



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)

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

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RS-485 Remote I/O Modules

M-7026