



M-7046

M-7046D

15-channel Isolated Digital Input Module

Features

- Sink- or Source-type Digital Input
- Photocoupler Isolation
- All Channels can be used as 16-bit Counters
- ±8 kV ESD Protection
- ±4 kV EFT Protection
- ±3 kV Surge Protection
- 5000 Vdc Isolation Voltage
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C



Introduction

The M-7046 is a 15-channel Digital Input module. Each channel features photocoupler isolation and can be used as a 16-bit counter. In addition, the Digital Input type can be selected as either sink or source via wire connections. The M-7046D module includes 15 LED indicators that can be used to monitor the status of the DI channels. 8 kV ESD protection and 5000 VDC intra-module isolation are also provided to enhance noise protection capabilities in industrial environments, making the M-7046(D) module an ideal solution for Digital Input applications.

Applications

- All Types of ON/OFF Control
- Industrial Automation
- Industrial Machinery
- Building Automation
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems

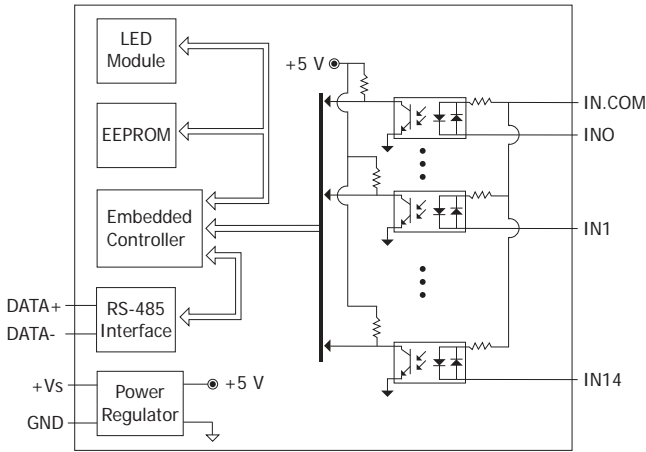
System Specifications

Model	M-7046	M-7046D
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)	
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	-	Yes, 15 LEDs as Digital Input Indicators
7-segment LED Display	-	
Isolation		
Intra-module Isolation, Field-to-Logic	5000 Vdc	
EMS Protection		
ESD (IEC 61000-4-2)	±8 kV Contact for each Terminal	
	±16 kV Air for Random Point	
EFT (IEC 61000-4-4)	±4 kV for Power Line	
Surge (IEC 61000-4-5)	±3 kV for Power	
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 Vdc	
Consumption	0.2 W	0.3 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	

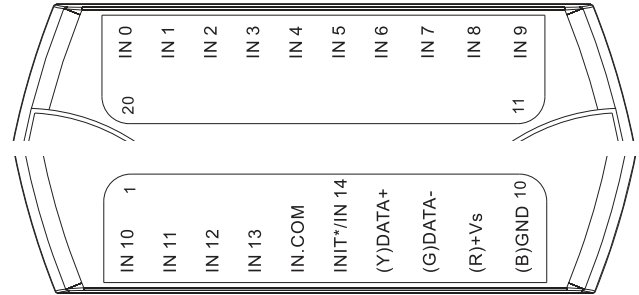
I/O Specifications

Model	M-7046	M-7046D
Digital Input/Counter		
Channels	15	
Type	Dry Contact	Wet
	Wet Contact	Sink/Source
Wet Contact	ON Voltage Level	+3.5 ~ +50 Vdc
	OFF Voltage Level	+1 Vdc Max.
Dry Contact	ON Voltage Level	-
	OFF Voltage Level	-
Counters	Effective Distance for Dry Contact	-
	Max. Count	65535 (16-bit)
	Max. Input Frequency	100 Hz
	Min. Pulse Width	5 ms
Input Impedance	10 kΩ	
Channel-to-Channel Isolation	-	
Overvoltage Protection	±70 Vdc	

Internal I/O Structure



Pin Assignments



Wire Connections

Digital Input/Counter	ON State Readback as 1 +3.5 ~ +50 VDC	OFF State Readback as 0 OPEN or +1 VDC Max.
Sink IN0 ~ IN13		
Source IN0 ~ IN13		
Sink IN14		
Source IN14		

Ordering Information

M-7046-G CR	15-channel Isolated Digital Input Module using the DCON or Modbus Protocol (Gray Cover) (RoHS)
M-7046D-G CR	M-7046 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)
	SG-3000 Series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers