



Features

- Sink-type Digital Outputs with High Driving
- Sink- or Source-type Digital Inputs
- Source-type Digital Outputs with High Driving
- Photocouple Isolation
- Short Circuit Protection
- DI Channels Can Be Used As 16-bit Counters
- Short Circuit Protection
- 4 kV ESD Protection
- 3750 V_{rms} Isolation Voltage
- 3750 V_{rms} Intra-Module Isolation
- Configurable Power-on Value Settings
- Configurable Safe Value Settings
- Wide Operating Temperature Range: -25 ~ +75°C



Introduction

The I-7055 offers 8 isolated channels for digital input and 8 isolated channels for digital output. You can choose either sink- or source-type digital input via wire connections. All DI channels are also able to be used as 16-bit counters. The I-7055 supports source-type output with short circuit protection. There are options to enable both power-on and safe values. The I-7055D has 16 LED indicators for DI and DO channel status monitoring. 4 kV ESD protection and 3750 V_{rms} intra-module isolation are standard. The hardware specifications for the M-7055 are the same as the I-7055 and both support the Modbus RTU and DCON protocols which can be configured via software.

System Specifications

Models	I-7055	I-7055D	M-7055	M-7055D
	I-7055-NPN	I-7055D-NPN	M-7055-NPN	M-7055D-NPN
Communication				
Interface	RS-485			
Format	N, 8, 1			
Baud Rate	1200 ~ 115200 bps			
Protocol	DCON		Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
LED Indicator/Display				
System LED Indicator	Yes, 1 LED as Power/Communication Indicator			
I/O LED Indicator	-	Yes	-	Yes
7-Segment LED Display	-			
Isolation				
Intra-Module Isolation, Field-to-Logic	3750 V _{rms}			
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			
Surge (IEC 61000-4-5)	±3 kV for Power Liner			
Power				
Reverse Polarity Protection	Yes			
Input Range	10 ~ 30 V _{dc}			
Consumption	0.8 W	1.6 W	0.8 W	1.6 W
	1.2 W	2.2 W	1.2 W	2.2 W
Mechanical				
Dimensions (W x L x H)	72 mm x 123 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
Environment				
Operating Temperature	-25 ~ +75°C			
Storage Temperature	-40 ~ +85°C			
Humidity	10 ~ 95% RH, Non-condensing			

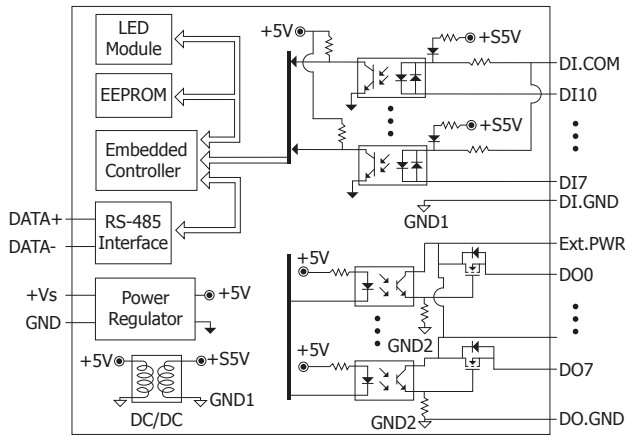
Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

I/O Specifications

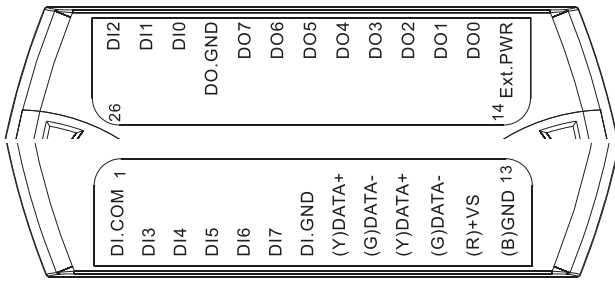
Models	I-7055	I-7055D	I-7055-NPN	I-7055D-NPN
	M-7055	M-7055D	M-7055-NPN	M-7055D-NPN
Digital Input/Counter				
Channels	8			
Contact	Dry + Wet			
Sink/Source (NPN/PNP)	Dry: Source Wet: Sink/Source			
Wet Contact	On Voltage Level	+10 ~ 50 V _{dc}		
	Off Voltage Level	+4 V _{dc} Max.		
Dry Contact	On Voltage Level	Close to GND		
	Off Voltage Level	Open		
Counters	Effective Distance for Dry Contact	500 m Max.		
	Max. Count	65535 (16-bit)		
	Max. Input Frequency	100 Hz		
Min. Pulse Width	5 ms			
Input Impedance	10 KΩ			
Overvoltage Protection	+/-70 V _{dc}			
Digital Output				
Channels	8			
Type	MOSFET			
Sink/Source (NPN/PNP)	Source			
Load Voltage	+10 ~ 40 V _{dc}			
Max. Load Current	650 mA/Channel			
Overvoltage Protection	47 V _{dc}			
Overload Protection	1.4 A (with short-circuit protection)			
Power-on Value	Yes			
Safe Value	Yes			

Internal I/O Structure

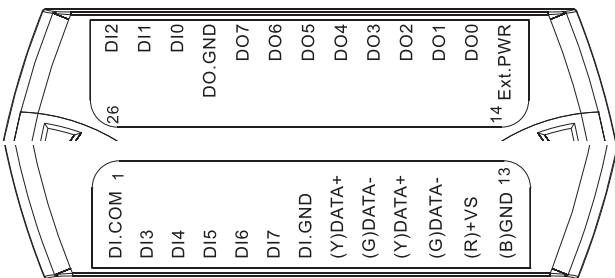


Pin Assignments

I-7055(D)/M-7055(D)



I-7055(D)-NPN/M-7055(D)-NPN



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 Pull-high/Pull-low 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 Inputs

Wire Connections

I-7055(D)/I-7055(D)-NPN/M-7055(D)/M-7055(D)-NPN		
Input Type	ON State Readback as 1	OFF State Readback as 0
Dry Contact	Close to GND 	Open
	$+10 \sim +50$ Vdc 	$+4$ Vdc Max.
Wet Contact (Sink)	$+10 \sim +50$ Vdc 	$+4$ Vdc Max.
	$+10 \sim +50$ Vdc 	$+4$ Vdc Max.

I-7055(D)/M-7055(D)

I-7055(D)/M-7055(D)		
Output Type	ON State Readback as 1	OFF State Readback as 0
Digital Output (Resistance Load)		
Digital Output (Inductive Load)		

I-7055(D)-NPN/M-7055(D)-NPN

I-7055(D)-NPN/M-7055(D)-NPN		
Output Type	ON State Readback as 1	OFF State Readback as 0
Digital Output (Resistance Load)		
Digital Output (Inductive Load)		

Ordering Information

I-7055 CR	8-channel Isolated DI and 8-channel Isolated DO Module with DCON Protocol (Blue Cover) (RoHS)
I-7055-G CR	8-channel Isolated DI and 8-channel Isolated DO Module with DCON Protocol (Gray Cover) (RoHS)
I-7055D CR	I-7055 with LED Display (Blue Cover) (RoHS)
I-7055D-G CR	I-7055 with LED Display (Gray Cover) (RoHS)
M-7055-G CR	8-channel Isolated DI and 8-channel Isolated DO Module with DCON and Modbus Protocol (Gray Cover) (RoHS)
M-7055D-G CR	M-7055 with LED Display (Gray Cover) (RoHS)
I-7055-NPN-G CR	8-channel Isolated DI and 8-channel Isolated DO Module (Gray Cover) (RoHS)
I-7055D-NPN-G CR	I-7055-NPN with LED Display (Gray Cover) (RoHS)
M-7055-NPN-G CR	8-channel Isolated DI and 8-channel Isolated DO Module with DCON and Modbus Protocol (Gray Cover) (RoHS)
M-7055D-NPN-G CR	M-7055-NPN with LED Display (Gray Cover) (RoHS)