



**I-7045(D)**



**M-7045(D)**



**I-7045(D)-NPN**



**M-7045(D)-NPN**

16-channel Isolated Digital output Module

## Features

- I-7045(D)/M-7045(D)
  - Source-type Digital Output Channels with Overload Protection
- I-7045(D)-NPN/M-7045(D)-NPN
  - Sink-type Digital Output Channels with Overload Protection
- Configurable Power-on Value Settings
- Configurable Safe Value Settings
- Short Circuit Protection
- Overload and Overvoltage Protection
- 3750 Vdc Intra-module Isolation
- 4 kV ESD and EFT Protection
- 3 kV Surge Protection for Power Input
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C



## Introduction

All modules in the 7045 series offer 16 digital output channels, each of which features Photocouple isolation. The I-7045(D)/M-7045(D) supports source-type output, while the I-7045(D)-NPN/M-7045(D)-NPN supports sink-type, and both are equipped with short circuit protection. There are options to enable both power-on and safe values, and 16 LED indicators that can be used to monitor the status of the digital output channels. 4 kV ESD protection, 4 kV EFT protection, 3 kV surge protection for power input and 3750 VDC Intra-module isolation are standard. The M-7045(D)/ M-7075(D)-NPN has the same hardware specifications as the I-7045(D)/I-7045(D)-NPN, but provides additional support for the Modbus RTU protocol as well as the DCON protocol.

## System Specifications

Model	I-7045	I-7045D	I-7045-NPN	I-7045D-NPN
	M-7045	M-7045D	M-7045-NPN	M-7045D-NPN
<b>Communication</b>				
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	DCON (for I-7045 series) Modbus RTU, DCON (for M-7045 series)			
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
<b>LED Indicators/Display</b>				
System LED Indicator	Yes, 1 as Power/Communication Indicator			
I/O LED Indicators	-	Yes, 16 LEDs as Digital Output Indicators	-	Yes, 16 LEDs as Digital Output Indicators
7-segment LED Display	-			
<b>Isolation</b>				
Intra-module Isolation, Field-to-Logic	3750 Vdc			
<b>EMS Protection</b>				
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 the 16 DO channels and Power, ±2 kV for the RS-485 Port			
Surge (IEC 61000-4-5)	±3 kV for Power Line			
<b>Power</b>				
Reverse Polarity Protection	Yes			
Input Range	+10 ~ +30 Vdc			
Consumption	0.6 W	1.5 W	0.4 W	1.2 W
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
<b>Environment</b>				
Operating Temperature	-25 to +75°C			
Storage Temperature	-40 to +85°C			
Humidity	10 to 95% RH, Non-condensing			

## Applications

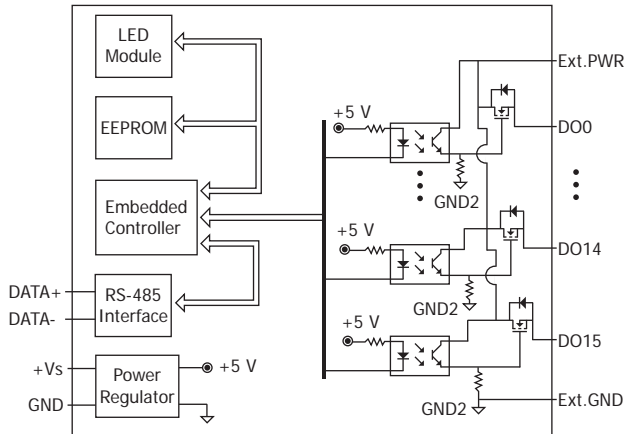
- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

## I/O Specifications

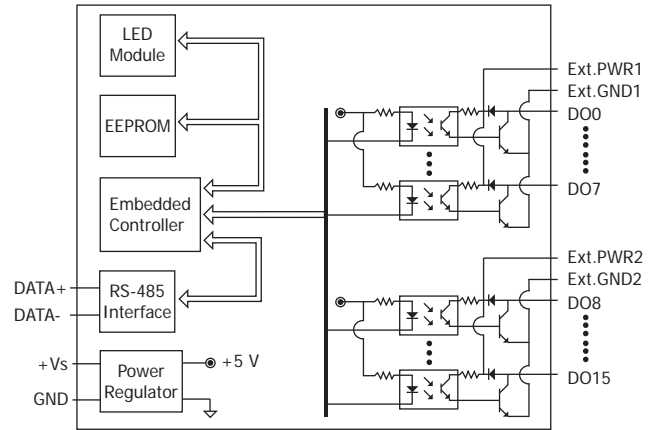
Model	I-7045	I-7045D	I-7045-NPN	I-7045D-NPN
	M-7045	M-7045D	M-7045-NPN	M-7045D-NPN
<b>Digital Output</b>				
Channels	16			
Type	Open Source		Open Collector	
Sink/Source (NPN/PNP)	Source		Sink	
Load Voltage	+10 ~ 40 Vdc		+3.5 ~ 50 Vdc	
Max. Load Current	650 mA/Channel		700 mA/Channel	
Overvoltage Protection	47 Vdc		60 Vdc	
Overload Protection	1.4 A (with Short-circuit Protection)			
Power-on Value	Yes			
Safe Value	Yes			

## Internal I/O Structure

I-7045(D)/M-7045(D)

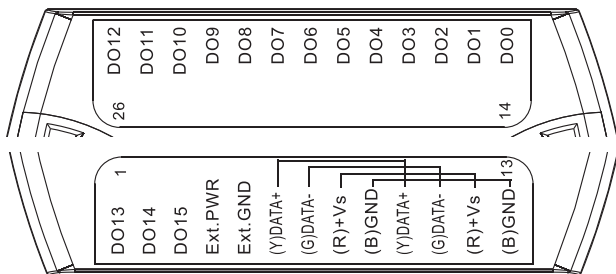


I-7045(D)-NPN/M-7045(D)-NPN

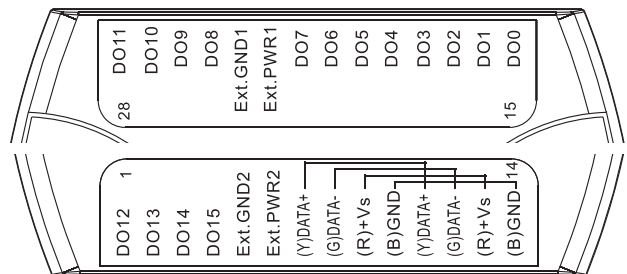


## Pin Assignments

I-7045(D)/M-7045(D)



I-7045(D)-NPN/M-7045(D)-NPN



## Wire Connections

I-7045(D)/M-7045(D)

Output Type	ON State Readback as 1	OFF State Readback as 0
Digital Output (Resistance Load)		
Digital Output (Inductive Load)		

I-7045(D)-NPN/M-7045(D)-NPN

Output Type	ON State Readback as 1	OFF State Readback as 0
Digital Output (Resistance Load)		
Digital Output (Inductive Load)		

## Ordering Information

<b>I-7045 CR</b>	16-channel Isolated Digital Output Module using the DCON Protocol (Blue Cover) (RoHS)
<b>I-7045-G CR</b>	16-channel Isolated Digital Output Module using the DCON Protocol (Gray Cover) (RoHS)
<b>I-7045D CR</b>	I-7045 with LED Display (Blue Cover) (RoHS)
<b>I-7045D-G CR</b>	I-7045-G with LED Display (Gray Cover) (RoHS)
<b>I-7045-NPN-G CR</b>	16-channel Isolated Digital Output Module using the DCON Protocol (Gray Cover) (RoHS)
<b>I-7045D-NPN-G CR</b>	I-7045-NPN-G with LED Display (Gray Cover) (RoHS)
<b>M-7045-G CR</b>	16-channel Isolated Digital Output Module using the DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7045D-G CR</b>	M-7045-G with LED Display (Gray Cover) (RoHS)
<b>M-7045-NPN-G CR</b>	16-channel Isolated Digital Output Module using the DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7045D-NPN-G CR</b>	M-7045-NPN-G with LED Display (Gray Cover) (RoHS)

## Accessories

	<b>tM-7520U CR</b> Tiny Isolated RS-232 to RS-485 Converter (RoHS)
	<b>tM-7561 CR</b> Tiny USB to Isolated RS-485 Converter with CA-USB18 Cable (RoHS)
	<b>tM-SG4 CR</b> RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)

	<b>I-7514U CR</b> Isolated 4-channel RS-485 Repeater/Hub/Splitter (Gray Cover) (RoHS)
	<b>SG-770 CR</b> 7/14 channel Surge Protector (RoHS)
	<b>SG-3000 Series</b> Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers