



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 |
| 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 | DCON (for I-7045 series) Modbus RTU, DCON (for M-7045 series) | | | |
| 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, 16 LEDs as Digital Output Indicators | - | Yes, 16 LEDs as Digital Output Indicators |
| 7-segment LED Display | - | | | |
| Isolation | | | | |
| Intra-module Isolation, Field-to-Logic | 3750 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 the 16 DO channels and Power, ±2 kV for the RS-485 Port | | | |
| Surge (IEC 61000-4-5) | ±3 kV for Power Line | | | |
| Power | | | | |
| 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 | | | |
| Environment | | | | |
| Operating Temperature | -25 to +75°C | | | |
| Storage Temperature | -40 to +85°C | | | |
| Humidity | 10 to 95% RH, Non-condensing | | | |

Applications

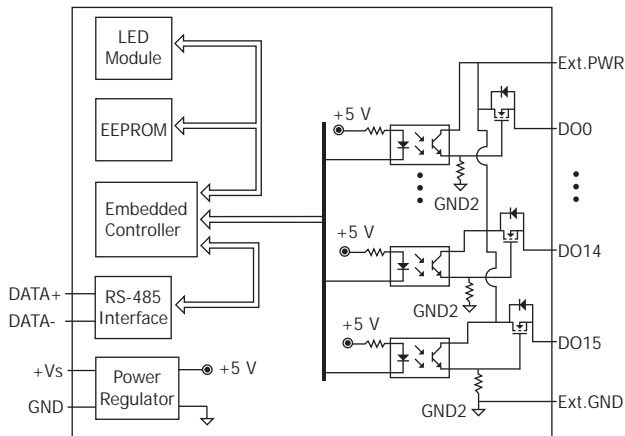
- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

I/O Specifications

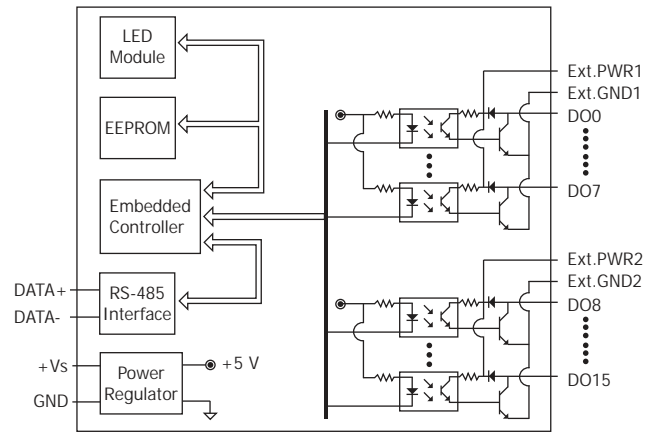
| Model | I-7045 | I-7045D | I-7045-NPN | I-7045D-NPN |
|------------------------|---------------------------------------|---------|----------------|-------------|
| | M-7045 | M-7045D | M-7045-NPN | M-7045D-NPN |
| Digital Output | | | | |
| Channels | 16 | | | |
| Type | Open Source | | Open Collector | |
| 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)

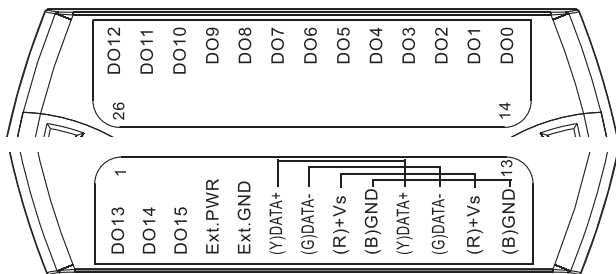


I-7045(D)-NPN/M-7045(D)-NPN

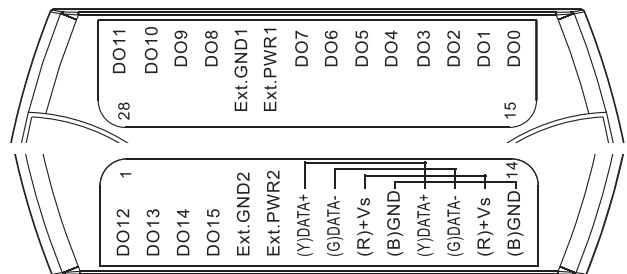


Pin Assignments

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

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