

I/O Modules for ISaGRAF PAC

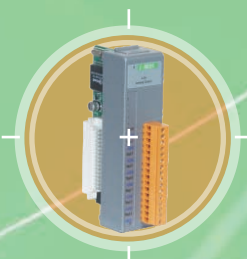
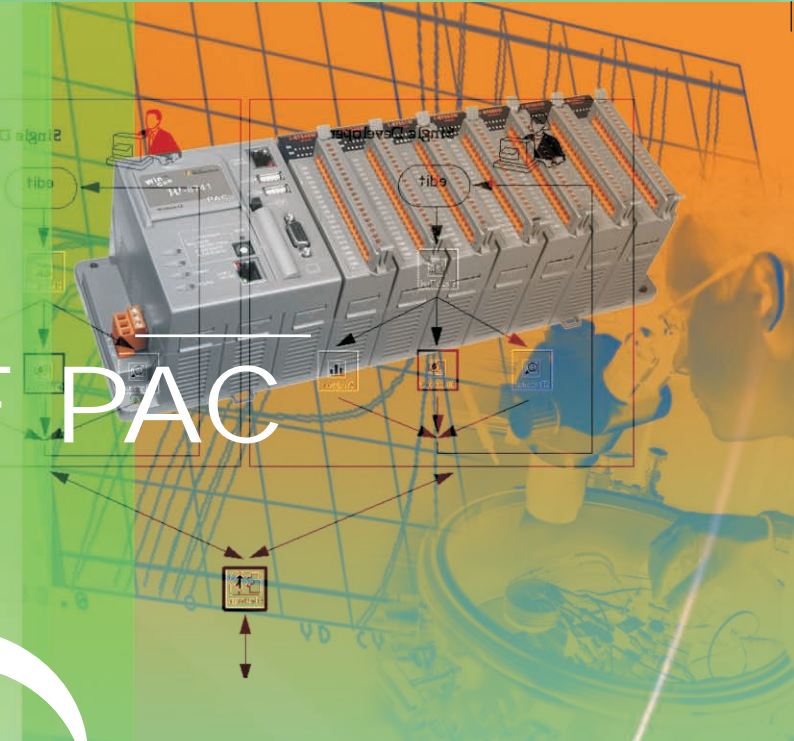
I-8K series I/O modules

I-87K series I/O modules

i-7000 series remote I/O modules

M-7000 series Modbus remote I/O modules

- Building/Factory Automation
- ITS ■ Remote Monitoring
- Environment Monitoring



www.icpdas.com





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About ICP DAS



ICP DAS founded in 1993, is a high-tech company focus on research and innovation. ICP DAS has been committed to the development of remote I/O controllers, distributed I/O modules, and I/O data acquisition boards. Having a complete industrial automation solutions and comprehensive after-sales service, ICP DAS is developing a series of products in recent years, such as programmable automation controllers, Internet-related produces and motion control system.

Products and Market

To satisfy users with running multiple applications of different functions on one platform, ICP DAS had released PAC series in 2004. PAC owns both advantages of PLC and IPC, and the key point is the breakthrough of embedded system.

With the accumulation of abundant experiences, we speed up to develop our products in every kind of series. To be the best supplier of remote I/O modules and embedded controllers is our future vision.

Excepted i-7000 series, remote I/O modules, developed years away, ICP DAS continually released kinds of buses of remote I/O modules in 2006. Those buses include :

- Remote access of PLC-like architecture
- Real-time FRnet buses such as FR-2000 series
- Ethernet-based modules such as ET-6000 series
- CAN bus-based remote I/O
- Other related protocol converter

With our customers' expectation, ICP DAS released RU-87Pn remote I/O units with hot swap function in 2007. In addition, in order to enter the mechanism industry, we are also going to develop related products of motion control and machine vision so that we hope to meet clients' requirement of one-stop-shopping as soon as possible.

Industrial Data Acquisition and Control Products

ICP DAS's products, such as DAQ cards for ISA & PCI communication, DI/DO devices and counter/timer boards, all have functions of analog to digital, digital to analog, RS-422/485 etc.

Data acquisition boards are capable of being used for automation in factory and laboratory, data logging in, signal analyzing, and product testing; surely, it can also be used for data control. Meanwhile, **DI/DO devices and counter/timer boards** are used for industrial control of ON/OFF, signal converting, alarm sending, radio switch in monitoring and control, as well as solenoid/valve control.

Vertical Market Focus

- | | |
|-------------------------|--------------------------------------|
| 1. Energy Monitoring | 6. Environmental Monitoring system |
| 2. Chemical engineering | 7. Intelligent Transportation system |
| 3. Factory Automation | 8. Facility Automation |
| 4. Telecommunication | 9. The Intelligent Building |
| 5. Machine Automation | 10. Human entertainment automation |

Applications

ICP DAS provides total solutions in industrial control, real time information, SCADA system, earthquakes and hydrological warning, power control, electronic control and many other fields. such as :

- Leading domestic industries in the fields of semiconductor
- LCD panel, and petrochemical industries adopt our products for monitoring and automation systems
- World's first high-rise building Taipei 101's enhancing fire safety system
- Fishing vessels voyage recorder system for whole Taiwan island
- Online pollution monitoring system in Jiangsu and Zhejiang in China
- LG battery charge and discharge system in Korea
- Force monitoring of Goddess Bridge Megami Bridge in Japan
- Whole-factory monitoring and control system for manufacturer of vehicle and jet seat in the United States, and so on.

Throughout the world, various applications in monitoring and factory automation systems are implemented by ICP DAS products.

OEM & ODM Project

ICP DAS's high-quality product is from our solid and strong technology. We have more than 150 experienced and superior engineers to support all kinds of OEM or ODM projects. ICP DAS always focus on providing customers an optimal industrial automation solution.

Global & Technical Support

ICP DAS (www.icpdas.com) provides a complete customer service system. Headquartered in Taiwan, worldwide supports are also located in America, China, Europe, and Japan. ICP DAS has established an international service network to provide customers technical support and sales service directly. (service@icpdas.com)

Moreover, ICP DAS cooperates with over 100 worldwide distributors together to connect the global network service successfully. ICP DAS support and service are available to you wherever you are in the world.



Remote I/O Modules

i-7000/ M-7000

■ New ■ Available soon ■ Will be Available

| Module | | i-7000 <small>Support Dcon Protocol</small> | M-7000 <small>Support Dcon & Modbus Protocol</small> |
|-----------------------------|-------------------|---|--|
| Solution | Type | http://www.icpdas.com -> products -> Remote I/O Modules/Units | |
| Analog Input | Voltage & Current | i-7012, i-7012D, i-7012F, i-7012FD, i-7017R, i-7017R-A5 , i-7017RC, i-7017Z | M-7017R, M-7017RC |
| | Thermocouple | i-7011, i-7011D, i-7011P, i-7011PD, i-7018R, i-7018Z , i-7019R | M-7018R, M-7018Z , M-7019R |
| | RTD | i-7013, i-7013D, i-7015 , i-7015P , i-7033/33D | M-7015, M-7015P , M-7033, M-7033D |
| | Thermistor | i-7005 | M-7005 |
| | Transmitter | i-7014D | |
| | Strain Gauge | i-7016, i-7016D, i-7016P, i-7016PD | M-7016 , M-7016D |
| Analog Output | | i-7021, i-7021P, i-7022, i-7024 | M-7022 , M-7024 |
| AC Digital Input | | i-7058, i-7058D, i-7059 , i-7059D | |
| DC Digital Input | | i-7041, i-7041D, i-7051 , i-7051D , i-7052, i-7052D, i-7053_FG, i-7053D_FG | M-7041, M-7041D, M-7051, M-7051D, M-7052, M-7052D, M-7053, M-7053D |
| DC Digital Output | | i-7042, i-7042D, i-7043, i-7043D, i-7045 , i-7045D | M-7045, M-7045D |
| DC Digital Input and Output | | i-7044, i-7044D, i-7050, i-7050D, i-7050A, i-7050AD, i-7055 , i-7055D | M-7050, M-7050D, M-7055, M-7055D |
| Power Relay Output | | i-7060, i-7060D, i-7063, i-7063D, i-7065, i-7065D, i-7067, i-7067D | M-7060, M-7060D, M-7067, M-7067D |
| Solid State Relay Output | | i-7063A, i-7063AD, i-7063B, i-7063BD, i-7065A, , i-7065AD, i-7065B, i-7065BD | |
| Photomos Relay Output | | i-7066, i-7066D | |
| Counter/Frequency | | i-7080, i-7080D, i-7080B , i-7080BD , i-7083 , i-7083D , i-7083B , i-7083BD | M-7080, M-7080D, M-7080B , M-7080BD |
| Memory | | | |
| Communication Modules | | | |
| Motion Modules | | | |
| Blank I/O Modules | | | |
| | | | |

Note: For industrial applications, we recommend to choose i-87K I/O modules

i-8K/ i-87K

| i-8K | Parallel I/O Modules (high-speed) | i-87K | Serial I/O Modules |
|---|---------------------------------------|---|--------------------|
| http://www.icpdas.com -> products -> Remote I/O Modules/Units | | | |
| i-8017H, i-8017HS | | i-87005W, i-87013W, i-87015, i-87015P, 87016W, i-87017W-A5, i-87017R, i-87017RC, i-87018R, i-87018Z, i-87019R | |
| i-8024 | | i-87024W, i-87028W | |
| i-8058 | | i-87058W, i-87059W | |
| i-8040, i-8051, i-8052, i-8053, i-8055 | | i-87040W, i-87046W, i-87051W, i-87052W, i-87053W, i-87053W-A5 | |
| i-8037, i-8041, i-8056, i-8057, i-8060, i-8064, i-8065, i-8066, i-8068, i-8069 | | i-87041W, i-87057W, i-87064W, i-87065W, i-87066W, i-87068W, i-87069W | |
| i-8042, i-8050, i-8054, i-8063, i-8077 | | i-87054W, i-87055W, i-87063W | |
| | | | |
| | | | |
| | | | |
| i-8080 | | i-87082W | |
| S256/512 | | | |
| i-8112, i-8114, i-8114H, i-8142, i-8142i, i-8144, i-8172 | | | |
| i-8090-G, i-8091-G, | | | |
| 4SIPP-801-CAB, 4SIPP-801-CAG | | | |
| | | | |



Web Informations

IO Module

i-8K

<http://www.icpdas.com/> → Products → Remote I/O Modules/Units / [i-8K Series I/O Module](#)

Or <http://www.icpdas.com/> → Products → PAC / [8K & 87K I/O Modules](#)

i-87K

<http://www.icpdas.com/> → Products → Remote I/O Modules/Units / [i-87K Series I/O Module](#)

Or <http://www.icpdas.com/> → Products → PAC / [8K & 87K I/O Modules](#)

i-7000

<http://www.icpdas.com/> → Products → Remote I/O Modules/Units / [i-7000 Modules \(DCON protocol\)](#) → i-7000

Or <http://www.icpdas.com/> → Products → PAC / [Remote I/O Modules](#)

M-7000

<http://www.icpdas.com/> → Products → Remote I/O Modules/Units / [M-7000 Modules \(Modbus protocol\)](#) → M-7000

Or <http://www.icpdas.com/> → Products → PAC / [Remote I/O Modules](#)

Manual

i-8K

<http://www.icpdas.com/> → Downloads → i-8000 Series / [8000 Series User's manual Size \(6.8MB\)](#)

i-87K

<http://www.icpdas.com/> → Downloads → i-7000 and i-87K Series / [i-87k Series User's Manual](#)

i-7000

<http://www.icpdas.com/> → Downloads → i-7000 and i-87K Series / [7000 Series User's Manual](#)

M-7000

<http://www.icpdas.com/> → Downloads → i-7000 and i-87K Series / [7000 Series User's Manual](#)

FAQ

<http://www.icpdas.com/> → FAQ

Fully Software Support (<http://www.icpdas.com/> → Products → Software)

Free charge :

DCON Utility:

<http://www.icpdas.com/> → Products → Software / DCON Utility

The DCON Utility is a toolkits that help user search the network, easily to Configure the I/O modules and test the I/O status via the serial port (RS-232/485) or ethernet port (using virtual com port). It support not only the DCON Protocol I/O modules but also the M Series I/O Modules (Modbus RTU M-7K,M-87K and will support Modbus ASCII M-87K) now.

OPC Servers:

<http://www.icpdas.com/> → Products → Software → NAOPOC DA Server

OPC is an industrial standard interface based on OLE technology. With the OPC server, I/O modules can be easily integrated to any software that has OPC client capability.

EZ Data Logger:

<http://www.icpdas.com/> → Products → Software / EZ Data Logger

EZ Data Logger is a small data logger software. It can be applied to small remote I/O system. With its user-friendly interface, users can quickly and easily build a data logger software without any programming skill.

ISaGRAF - Demo:

<http://www.isagraf.com/> → Products → Download Demo → ISaGRAF 3.55 Full

<http://www.icpdas.com/> → Products → Software / ISaGRAF → ISaGRAF V3.5x button

Download Toolkits (<http://www.icpdas.com/> → Products → Downloads)

We provide many software tools to support all i-7000/M-7000 modules. DCON utility can help user to config and test the i-7000/M-7000 modules. Plenty of library functions and demo programs are provided to let user develop programs easily under Windows, Linux and DOS operating systems. We also provide LabVIEW driver, DASyLab driver and InduSoft driver for all i-7000/M-7000 modules.

i-7000

<http://www.icpdas.com/> → Downloads → i-7000 and i-87K Series / [7000 and 87K Series Toolkits](#)

Or <http://www.icpdas.com/> → Products → PAC / Remote I/O Modules → [Software](#)

i-87K

<http://www.icpdas.com/> → Downloads → i-7000 and i-87K Series / [7000 and 87K Series Toolkits](#)

i-8K

<http://www.icpdas.com/> → Downloads → i-8000 Series / [8000 Series Software](#)



i-7000 Introduction

■ Introduction

The i-7000/M-7000 modules provide cost-effective protection and conditioning for a wide range of valuable industrial control signals and system. Our product line includes sensor-to-computer, computer-to-sensor, digital I/O, timer/ counter, RS-232 to RS-485 converter, RS-485 repeater, man machine interface, data display and application software. The command set of i-7000/M-7000 modules is backward compatible to ADAM, Nudam, and 6B series of Analog Device. The M-7000 modules also support the industrial standard Modbus RTU protocol.

>> "Self-Tuner" design

The i-7520 contains a "Self Tuner" ASIC on the modules. This chip can auto tune the data baud rate and data format in the whole RS-485 network. In other words, the user may use it via RS-485 network to link PLC, RS-485 device, RS-232 device and other PC. Even the data format and data baud rate of those devices is different.

>> Why "Self Tuner"

In industrial application system, the user may use RS-485 network to link PLC, PC, RS-232 device, machine, etc. Because the data baud rate and the data format of that device are different, it is impossible for the converter to link them. The i-7520 contains a patented "Self Tuner" ASIC. This chip can auto-tune the baud and data format in whole RS-485 network. It also handles the direction of the RS-485 communication line. Since the unique features of this ASIC, you can implement a very flexible RS-485 network system. The user doesn't have to open the cover of i-7520 to adjust dip switch settings for different baud rate and data format.

>> I/O range programmable

I/O type and range of modules are configurable. The users select the type and range remotely by issuing command from the host. You can use fewer modules for different applications. It can increase application flexibility and lower the maintenance cost.

>> Dual Watchdog Design

i-7000/M-7000 Provides module watchdog and host watchdog. The module watchdog is a hardware watchdog. The host watchdog is a software watchdog. The module watchdog is designed to automatically reset the microprocessor when the module hangs. The host watchdog monitors the host controller (PC or PLC). The output of module can go to the safe value state when the host fails.

>> Easy mounting and connection

The user may mount the modules on a DIN rail, panel or wall. The user can use the screw-terminal block to connect to the signals.

>> Host Swap Design

The plug-in terminal blocks are used in i-7000/M-7000 modules. The user may hot-swap the modules directly and reduces the maintenance effort.

>> RS-485 Industrial Multi-Drop network

The i-7000/ M-7000 series modules use the industrial EIA RS-485 communication protocol to transmit and receive data at high speed over long distance. All modules are designed to be easy to interface to the popular computer and controller. Internal surge protection circuitry is used on data lines to protect the modules from spikes.

>> Wide Range Power Input

The i-7000/M-7000 module requires 10V to 30V unregulated DC power supply.

>> Communication protocol

All i-7000/ M-7000 modules use a simple command /response protocol for communication. A module must be interrogated by the host to obtain data. A module can never initiate a command sequence. The M-7000 also supports the industrial standard Modbus RTU protocol. The user can use high-level language, such as C, VB, Delphi, and others to write their application programs. Some famous packages can control i-7000/M-7000 directly, such as Labview, HP VIEW, Testpoint, ISaGRAF, etc.

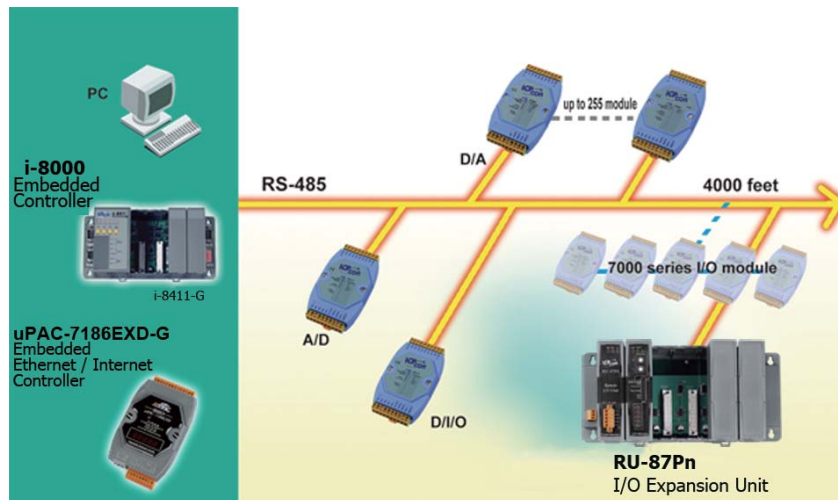
>> Intelligent design

i-7000/M-7000 modules provide signal conditioning system monitoring, alarm signal output, and safe value setting.

>> Stand alone Control

The user may use the i-7188 embedded control module to control the I/O ports of i-7000/M-7000 module directly without host. The user can download an application program to the flash memory of i-7188 from the host via the RS-232 port.

- **The i-7000 series** is a family of network data acquisition and control modules that support DCON protocols. It has the same form factor as the M-7000 series.



■ i-7000 Series Common Features

Isolation Voltage : 3000V DC

Photo-Isolation : 3750 Vrms

Communication :

- Asynchronous half-duplex 2-wire RS-485 network
- Max. distance without repeater=4000 feet(1.2Km)
- Speed=1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
- A maximum of 256 modules can be connected in a single RS-485 bus without using a repeater
- Multiple baud rates and multiple data formats can share the same RS-485 bus(i-7520/7510)
- Different baud rates and the same module address can share the same RS-485 bus
- Connecting $256 \times 8 = 2048$ modules max. in one RS-485 bus with repeater
- i-7000 series data format = 1 start + 8 data + 1 stop + no parity = 10-bit
- Two extra checksum bytes can be enabled/disabled
- Built-in transient voltage suppresser and PTC protector
- Sharing the same RS-485 bus with a RS-485 or RS-232 device that communicates in multiple data format not 10-bit) and multiple baud rate. (Use i-7520 to convert from RS-232 to RS-485)

Power :

- +10V ~ +30V DC
- Power reverse protection, over-voltage brown-out protection

System :

- Internal dual watchdog , power-on start value and safe value for host failure
- Operating temperature : -25 to 75 °C
- Storage temperature : -40 to 85 °C
- Humidity : 5 to 95%, non-condensing

LED Display : 1 LED as Power/ Communication indicator

AI Modules - Voltage & Current

Page 1-14~23

| Modules | | i-7012/ 7012D | i-7012F/ 7012FD | i-7017R | i-7017R -A5 | i-7017RC | i-7017Z |
|------------------------|-------------------------|---|---|---|-------------------|-----------------------------|--|
| Analog Input | Resolution | 16 bit | 16/12 bit | 16/12 bit | 16/12 bit | 16/12 bit | 16/12 bit |
| | Input channels | 1 diff. | 1 diff. | 8 diff. | 8 diff. | 8 diff. | 10 diff. or 20 SE |
| | Sampling rate (total) | 10Hz | 10/100 Hz | 10/60 Hz | 10/50 Hz | 10/60 Hz | 10/60 Hz |
| | Voltage & Current input | +/-150mV +/-500mV +/-1V +/-5V +/-10V +/-20mA (*) * Need external 125Ω resistors ** Jumper selectable | +/-150mV +/-500mV +/-1V +/-5V +/-10V +/-20mA (*) | +/-150mV +/-500mV +/-1V +/-5V +/-10V +/-20mA (*) | +/-50V +/-150V | 0~20mA 4~20mA +/-20mA | +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V 0~20mA 4~20mA +/-20mA (**) |
| | Common voltage | - | - | - | - | +/-200VDC | - |
| | Over voltage protection | - | - | +/-240 Vrms | 200V DC | - | 240 Vrms, 150Vrms(SE) |
| | Isolation voltage | 3000V | 3000V | 3000V | 3000V | 3000V | 3000V |
| Digital Input & Output | Digital input channels | 1 | 1 | - | - | - | - |
| | Digital output channels | 2 | 2 | - | - | - | - |
| | Event Counter | Yes | Yes | - | - | - | - |
| | High/ Low Alarm | Yes | Yes | - | - | - | - |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes | Yes | Yes |
| Frame Ground | | - | - | Yes | Yes | Yes | Yes |

AI Modules - Thermocouple

Page 1-24~31

| Modules | | i-7011/ 7011D | i-7011P/ 7011PD | i-7018R | i-7018Z | i-7019R |
|---------------------------------|-------------------------|---|---|---|---|---|
| Analog Input | Resolution | 16 bit | 16 bit | 16 bit | 16 bit | 16 bit |
| | Input channels | 1 diff. | 1 diff. | 8 diff. | 10 diff. | 8 diff. |
| | Sampling rate (total) | 10 Hz | 10 Hz | 10 Hz | 10 Hz | 10 Hz |
| | Voltage & Current input | +/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V +/-20mA (*) * Need external 125Ω resistors ** Jumper selectable | +/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V +/-20mA (*) | +/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V +/-20mA (*) | +/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V +/-20mA (*) | +/-15mV +/-50mV +/-100mV +/-150mV +/-500mV +/-1V, +/-2.5V +/-5V, +/-10V +/-20mA (**) |
| | Sensor input | J.K.T.E. R. S. B. N.C Thermocouple | J.K.T.E.R.S. B.N.C.L.M Thermocouple | J.K.T.E.R.S. B.N.C.L.M Thermocouple | J.K.T.E.R.S. B.N.C.L.M, LDIN43710 Thermocouple | J.K.T.E.R.S. B.N.C.L.M, LDIN43710 Thermocouple |
| | Over voltage protection | - | - | +/-240 Vrms | +/-240 Vrms | +/-240 Vrms |
| | Isolation voltage | 3000V | 3000V | 3000V | 3000V | 3000V |
| Digital Input & Output | Digital input channels | 1 | 1 | - | - | - |
| | Digital output channels | 2 | 2 | - | - | - |
| | Event Counter | Yes | Yes | - | - | - |
| | High/ Low Alarm | Yes | Yes | - | - | - |
| Individual Channel Configurable | | - | - | - | Yes | Yes |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes | Yes |
| Open Wire Detection | | Yes | Yes | Yes | Yes | Yes |
| Frame Ground | | - | - | Yes | Yes | Yes |

AI Modules - RTD

Page 1-32~37

| Modules | | i-7015 | i-7015P | i-7033/ 7033D |
|--|-----------------------|-------------------------------------|-------------------------------------|----------------------|
| Analog Input | Resolution | 16 bit | 16 bit | 16 bit |
| | Input channel | 6 diff. | 6 diff. | 3 diff. |
| | Sampling rate (total) | 12 Hz | 12 Hz | 15 Hz |
| | Sensor input | Pt100, Pt1000, Ni120, Cu100, Cu1000 | Pt100, Pt1000, Ni120, Cu100, Cu1000 | Pt100, Pt1000, Ni120 |
| | Isolation voltage | 3000V | 3000V | 3000V |
| 3-wire RTD lead resistance elimination | | - | Yes | - |
| Individual Channel Configurable | | Yes | Yes | - |
| Dual Watchdog Timer | | Yes | Yes | Yes |
| Open Wire Detection | | Yes | Yes | Yes |
| Frame Ground | | Yes | Yes | - |

AI Modules - Thermistor

Page 1-38~39

| Modules | | i-7005 |
|---------------------------------|-------------------------|--|
| Analog Input | Resolution | 16 bit |
| | Input channel | 8 diff. |
| | Sampling rate | 8 Hz |
| | Sensor input | Precon ST-A3, Fenwell U, YSI L100, YSI L300, YSI L1000, YSI B2252, YSI B3000, YSI B5000, YSI B6000, YSI B10000, YSI H10000, YSI H30000, User-defined |
| | Isolation voltage | 3000V |
| Digital Output | Digital output channels | 6 |
| | High/ Low Alarm | Yes |
| Individual Channel Configurable | | Yes |
| Dual Watchdog Timer | | Yes |
| Frame Ground | | Yes |

AI Modules - Transmitter

Page 1-40~41

| Modules | | i-7014D |
|------------------------|---|---|
| Analog Input | Resolution | 16 bit |
| | Input channel | 1 diff. |
| | Sampling rate | 10Hz |
| | Voltage & Current input * Need external 125Ω resistors | +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA (*) |
| | Isolation voltage | 3000V |
| Digital Input & Output | Digital input channels | 1 |
| | Digital output channels | 2 |
| | Event Counter | Yes |
| | High/ Low Alarm | Yes |
| Dual Watchdog Timer | | Yes |
| Input Linear Scaling | | Yes |



Selection Guide

i-7000 Modules

AI / AO / DI

AI Modules - Strain Gauge

Page 1-42~43

| Modules | | i-7016/ 7016D | i-7016P/ 7016PD |
|------------------------|-------------------------|---|---|
| Analog Input | Resolution | 16 bit | 16 bit |
| | Input channel | 2 diff. | 1 diff. |
| | Sampling rate (total) | 10Hz for 1-channel mode, 2Hz for 2-channel mode | |
| | Voltage & Current input | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V, +/-20mA | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V, +/-20mA |
| | Sensor input | 4 Wire Strain Gauge | 6 Wire Strain Gauge |
| | Isolation voltage | 3000V | 3000V |
| Digital Input & Output | Digital input channels | 1 | 1 |
| | Digital output channels | 4 | 4 |
| | Event Counter | Yes | Yes |
| | High/ Low Alarm | Yes | Yes |
| Dual Watchdog Timer | | Yes | Yes |
| Input Linear Scaling | | Yes | Yes |

AO Modules

Page 1-44~49

| Modules | | i-7021 | i-7021P | i-7022 | i-7024 |
|---------------------|--|----------------|----------------|----------------|----------------------------|
| Analog Output | Resolution | 12 bit | 16 bit | 12 bit | 14 bit |
| | Output channels ** channel to channel isolation | 1 | 1 | 2 (**) | 4 |
| | Voltage output | 0-10V | 0-10V | 0-10V | +/-10V, 0-10V, +/-5V, 0-5V |
| | Current output | 0-20mA, 4-20mA | 0-20mA, 4-20mA | 0-20mA, 4-20mA | 0-20mA, 4-20mA |
| | Power Consumption | 1.8 W | 1.8 W | 3.0 W | 2.3 W |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes |

DC Digital Input

Page 1-50~57

| Modules | | i-7041/ 7041D | i-7051/ 7051D | i-7052/ 7052D | i-7053 FG/ 7053D FG |
|---------------------|------------------------|------------------|--------------------------------|----------------------------------|------------------------|
| AC Digital Input | Digital input channels | 14 (Sink) | 16 (Sink/Source) | 8 (Sink) | 16 (Source) |
| | Input type | Common Source | Common Source or Common Ground | 6 Differential & 2 Common Ground | Dry Contact |
| | On voltage level | +4 to +30V | +10 to +50V | +4 to +30V | +4 to +30V |
| | Off voltage level | +1V Max. | +4V Max. | +1V Max. | +1V Max. |
| | Input impedance | 3K Ohms | 10K Ohms | 3K Ohms | 820 Ohms |
| | Isolation voltage | 3750Vrms | 3750Vrms | 5000Vrms | - |
| Counter | Channels | 14 | 16 | 8 | 16 |
| | Input frequency | 100 Hz | 100 Hz | 100 Hz | 100 Hz |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes |

AC Digital Input

Page 1-58~61

| Modules | | i-7058/ 7058D | i-7059/ 7059D |
|------------------------|------------------------|------------------|------------------|
| AC Digital Input | Digital input channels | 8 Differential | 8 Differential |
| | Max. Input Voltage | 80 VAC | 80 VAC |
| | On voltage level | > 80 VAC Max. | > 10 VAC |
| | Off voltage level | < 20 VAC Max. | < 3VAC |
| | Operating AC frequency | 50/60 Hz | 47/400 Hz |
| | Input impedance | 68K Ohms, 1W | 10K Ohms, 1W |
| | Isolation voltage | 5000Vrms | 5000Vrms |
| Counter | Channels | 8 | 8 |
| | Input frequency | 100 Hz | 100 Hz |
| Dual Watchdog Timer | | Yes | Yes |

DC Digital Output

Page 1-62~67

| Modules | | i-7042/ 7042D | i-7043/ 7043D | i-7045/ 7045D |
|--------------------------|-------------------------|----------------------|----------------------|------------------------|
| DC Digital Output | Digital output channels | 13 (Sink) | 16 (Sink) | 16 (Source) |
| | Output type | Open Collector (NPN) | Open Collector (NPN) | Open Source (N-MOSFET) |
| | Load voltage | +10 to +30V | +10 to +30V | +10 to +40V |
| | Max load current | 100mA | 100mA | 650mA |
| | Isolation voltage | 3750Vrms | - | 3750Vrms |
| | Power consumption | 0.9W/ 1.5W | 0.4W/ 1.2W | 1.0W/ 1.8W |
| Short-Circuit Protection | | - | - | Yes |
| Dual Watchdog Timer | | Yes | Yes | Yes |

DC Digital Input and Output

Page 1-68~75

| Modules | | i-7044/ 7044D | i-7050/ 7050D | i-7050A/ 7050AD | i-7055/ 7055D |
|---------------------------------------|---|------------------------|------------------|--------------------|------------------------|
| DC Digital Input & Output | Digital input channels | 4 Isolation (3750V) | 7 | 7 | 8 Isolation (3750V) |
| | Input impedance | 3K Ohms | - | - | 10K Ohms |
| | ON voltage level | +4 to +30V | +4 to +30V | +4 to +40V | +10 to +50V |
| | OFF voltage level | +1V Max. | +1V Max. | +1V Max. | +4V Max. |
| | Digital Output channels (Open collector) | 8 Isolation (3750V) | 8 | 8 | 8 Isolation (3750V) |
| | Load voltage | +10 to +30V | +10 to +30V | +10 to +30V | +10 to +40V |
| | Max load current | 375mA | 30mA | 50mA | 650mA |
| | Power consumption | 0.6W/ 1.2W | 0.4W/ 1.2W | 1.0W/ 1.8W | 0.8W/1.6W |
| Counter | Channels | 4 | 7 | 7 | 8 |
| | Input frequency | 100 Hz | 100 Hz | 100 Hz | 100 Hz |
| Short-Circuit Protection | | - | - | - | Yes |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes |



Selection Guide

i-7000 Modules

Power / Solid-State Relay Output

Power Relay Output

Page
1-76~83

| Modules | | i-7060/ 7060D | i-7063/ 7063D | i-7065/ 7065D | i-7067/ 7067D |
|--------------------------------|-------------------------|---|-------------------------------|-------------------------------|-------------------------------|
| Digital Input & Digital Output | Digital input channels | 4 Isolation (3750V) | 8 Isolation (3750V) | 4 Isolation (3750V) | - |
| | Input impedance | 3K Ohms | 3K Ohms | 3K Ohms | - |
| | ON voltage level | +4 to +30V | +4 to +30V | +4 to +30V | - |
| | OFF voltage level | +1V Max. | +1V Max. | +1V Max. | - |
| | Digital Output channels | 4 channel Relay Form A x 2 Form C x 2 | 3 channel Relay Form A x 3 | 5 channel Relay Form A x 5 | 7 channel Relay Form A x 7 |
| | Contact rating | 0.6A@125VAC 2A@30VDC | 5A@250VAC 5A@30VDC | 5A@250VAC 5A@30VDC | 0.5A@120VAC 1.0A@24VDC |
| | Surge strength | 500V | 4000V | 4000V | 1500V |
| | Operate time | 3mS | 6mS Max. | 6mS Max. | 5mS Max |
| | Release time | 2mS | 3mS | 3mS | 2mS |
| | Min life | 5*10 ⁵ ops. | 10 ⁵ ops. | 10 ⁵ ops. | 10 ⁵ ops. |
| | Power consumption | 1.3W/ 1.9W | 1.0W/ 1.5W | 1.3W/ 2.2W | 1.5W/ 2.2W |
| Counter | Channels | 4 | 8 | 4 | - |
| | Input frequency | 100 Hz | 100 Hz | 100 Hz | - |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes |

Solid-State Relay Output

Page
1-84~91

| Modules | | i-7063A/ 7063AD | i-7063B/ 7063BD | i-7065A/ 7065AD | i-7065B/ 7065BD |
|--------------------------------|-------------------------|--|--|--|--|
| Digital Input & Digital Output | Digital input channels | 8 Isolation (3750V) | 8 Isolation (3750V) | 4 Isolation (3750V) | 4 Isolation (3750V) |
| | Input impedance | 3K Ohms | 3K Ohms | 3K Ohms | 3K Ohms |
| | ON voltage level | +4 to +30V | +4 to +30V | +4 to +30V | +4 to +30V |
| | OFF voltage level | +1V Max. | +1V Max. | +1V Max. | +1V Max. |
| | Digital output channels | 3 channel Relay AC type SSR ,Normal open | 3 channel Relay DC type SSR ,Normal open | 3 channel Relay AC type SSR ,Normal open | 3 channel Relay DC type SSR ,Normal open |
| | Load voltage range | 24 to 265 Vrms | 3 to 30VDC | 24 to 265 Vrms | 3 to 30VDC |
| | Leakage current | 1.5 mArms | 0.1mA | 1.5 mArms | 0.1mA |
| | Max load current | 1.0 Arms | 1.0A | 1.0 Arms | 1.0A |
| | Min. operate time | 1/2 cycle +1mS | 1mS | 1/2 cycle +1mS | 1mS |
| | Min. release time | 1mS | 1mS | 1mS | 1mS |
| | Dielectric strength | 2500 Vrms | 2500 Vrms | 2500 Vrms | 2500 Vrms |
| | Power consumption | 0.7W/ 1.5W | 0.6W/ 1.4W | 0.8W/ 1.6W | 0.7W/ 1.5W |
| Counter | Channels | 8 | 8 | 4 | 4 |
| | Input frequency | 100 Hz | 100 Hz | 100 Hz | 100 Hz |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes |

PhotoMos Relay Output

Page 1-92~93

| Modules | | i-7066/ 7066D |
|---------------------|-------------------------|---------------------------|
| Analog Input | Digital output channels | 7 channel Photo Mos Relay |
| | Load current | 0.13A |
| | Load voltage | 350V max |
| | Release time | 0.7mS typ |
| | Operate time | 0.05mS typ |
| | Isolation voltage | 5000VAC |
| | Power consumption | 0.5W/ 0.8W |
| Dual Watchdog Timer | | Yes |

Counter/ Frequency, Encoder Counter

Page 1-94~99

| Modules | | i-7080/ 80D/ 80B-G/ 80BD-G | i-7083/ 7083D/ 83B/ 83BD |
|---|--------------------|---|--|
| Counter Input & Digital Output | Input channels | 2 independent | 3-axis |
| | Input type | Isolated or non-isolated | Isolated |
| | Max. count | 32 bit | 32 bit |
| | Max. counting rate | 100K Hz | 1M Hz |
| | Isolation voltage | Logic level 0: +1V max. Logic level 1: +3.5 to 30V | Input level 5V Logic High : 3.5V~5V Logic Low :0V~2V ----- Input 12V with external resistor 1K ohm Logic High: 5V~12V ----- Input 24V with external resistor 2K ohm Logic High:7V~24V Logic Low :0V~2V |
| | Output channel | 2 | - |
| | Output type | Source, Open-Collector | - |
| | Output voltage | 30V max. | - |
| | Output current | 30mA max. | - |
| | Power consumption | 2.0W (i-7080/80B-G), 2.2W | 1W (i-7083/83B)/ 1.5W |
| Dual Watchdog Timer | | Yes | Yes |
| B: means built-in battery back up for counter value D: means LED Display | | | |



i-7012/F i-7012D/FD

Description

- Measure V, mV, mA
- "D" means LED Display
- The i-7012D is the i-7012 with a 4 1/2 digital LED display
- "F" means "Fast" mode.



Specifications

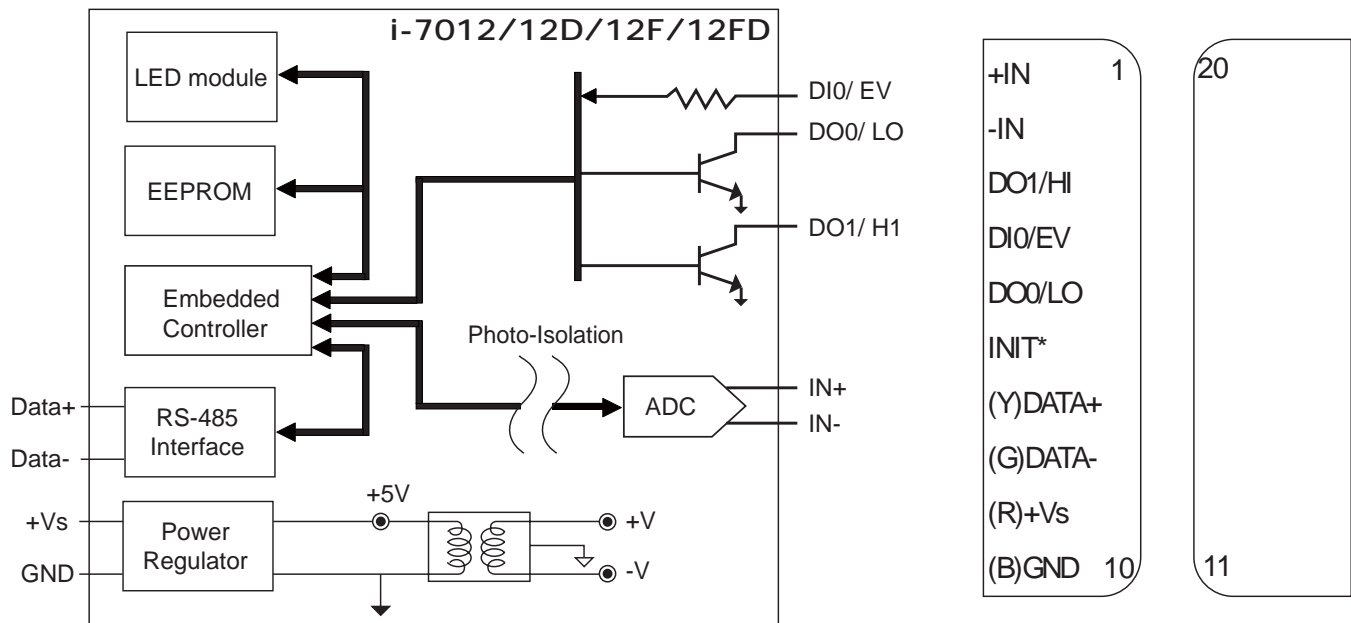
| ■ Analog Input | | | |
|---|--|---|--|
| Input channels | 1 | Band width | 5.24Hz |
| Input type | +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V +/-20mA (requires optional external 125ohm resistor) | | |
| Resolution | Fast Mode: 12-bit , Normal Mode: 16-bit (for i-7012/D) | | |
| Sampling rate | Fast Mode: 100 Samples/Second, Normal Mode: 10 Samples/Second (for i-7012/D) | | |
| Accuracy | +/-0.25% or better (for i-7012F/FD), +/-0.05% or better (for i-7012/D) | | |
| Zero drift | +/- 20uV/°C | Common mode rejection | 86dB |
| Span drift | 25ppm/°C | Normal mode rejection | 100dB |
| Input impedance | 20M Ohms | Intra-module isolation, field to logic : 3000 VDC | |
| ■ Digital Input | | | |
| Input channels | 1 | Max input frequency | 50Hz |
| Logic level 0 | + 1V max | Min. pulse width | 1 ms |
| Logic level 1 | + 3.5V to 30V | | |
| ■ Digital Output | | | |
| Output channels | 2 | Output type | Sink, Open Collector to 30V |
| Output load | 30mA max per channel | Power dissipation | 300 mw |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 4 1/2 digits (for i-7012D/ 12FD) | | Power consumption | 1.3W (i-7012/12F) 1.9W (i-7012D/12FD) |

Ordering Information

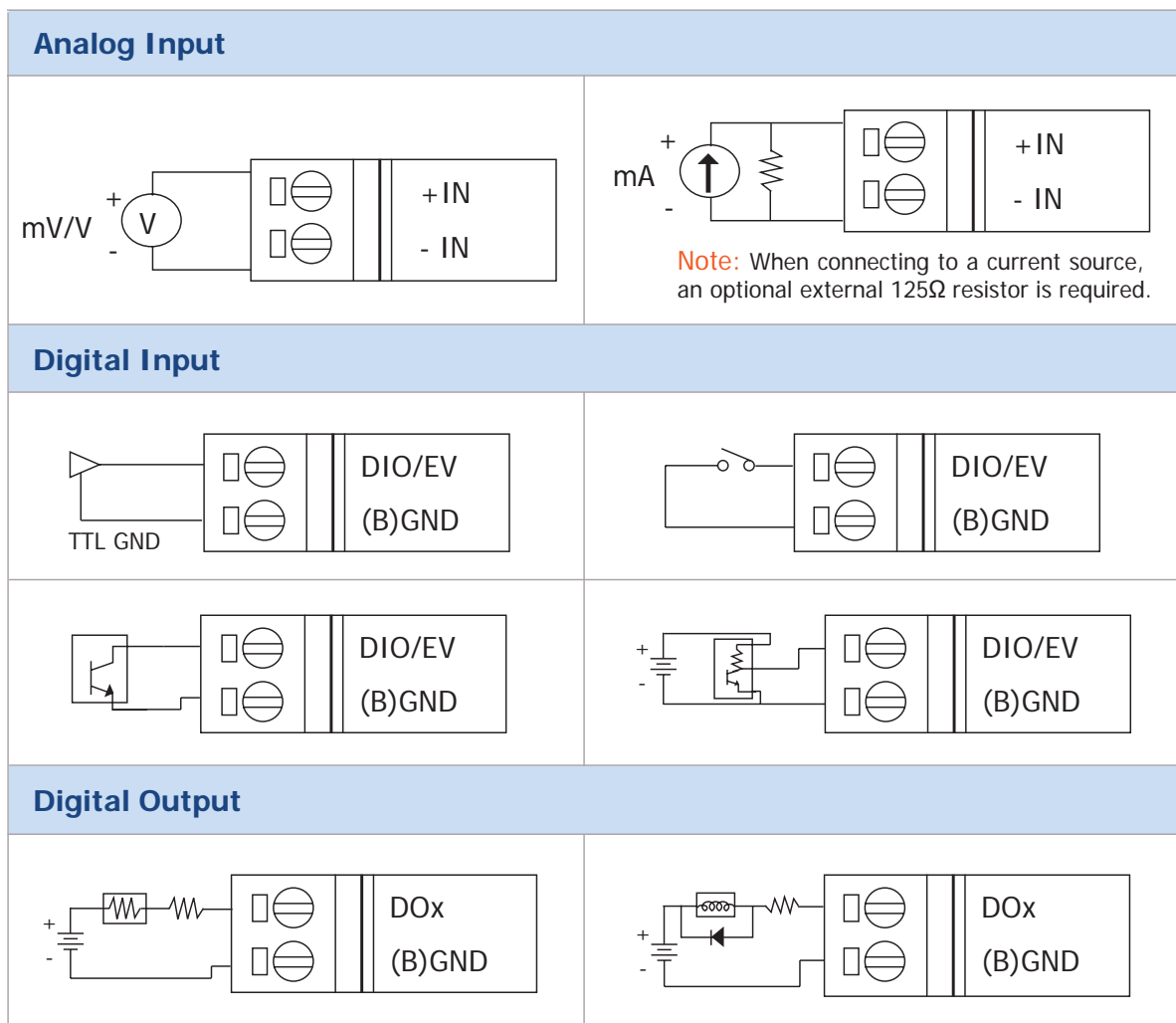
| | |
|--------------------|---|
| i-7012/ 7012F CR | 1-Channel Analog Input Module (F: High Speed) (RoHS) |
| i-7012D/ 7012FD CR | 1-Channel Analog Input Module with LED Display (F: High Speed) (RoHS) |

Internal I/O Structure

Pin Assignment



Wire Connection





i-7000 AI Modules



i-7017R

Voltage & Current

8-channel Analog Input Module with **High Voltage Protection** 

Description

- Measure V, mV, mA
- “R” means “Robust”. It has 240V high voltage overload protection. It also supports the fast mode as “F” model.



Specifications

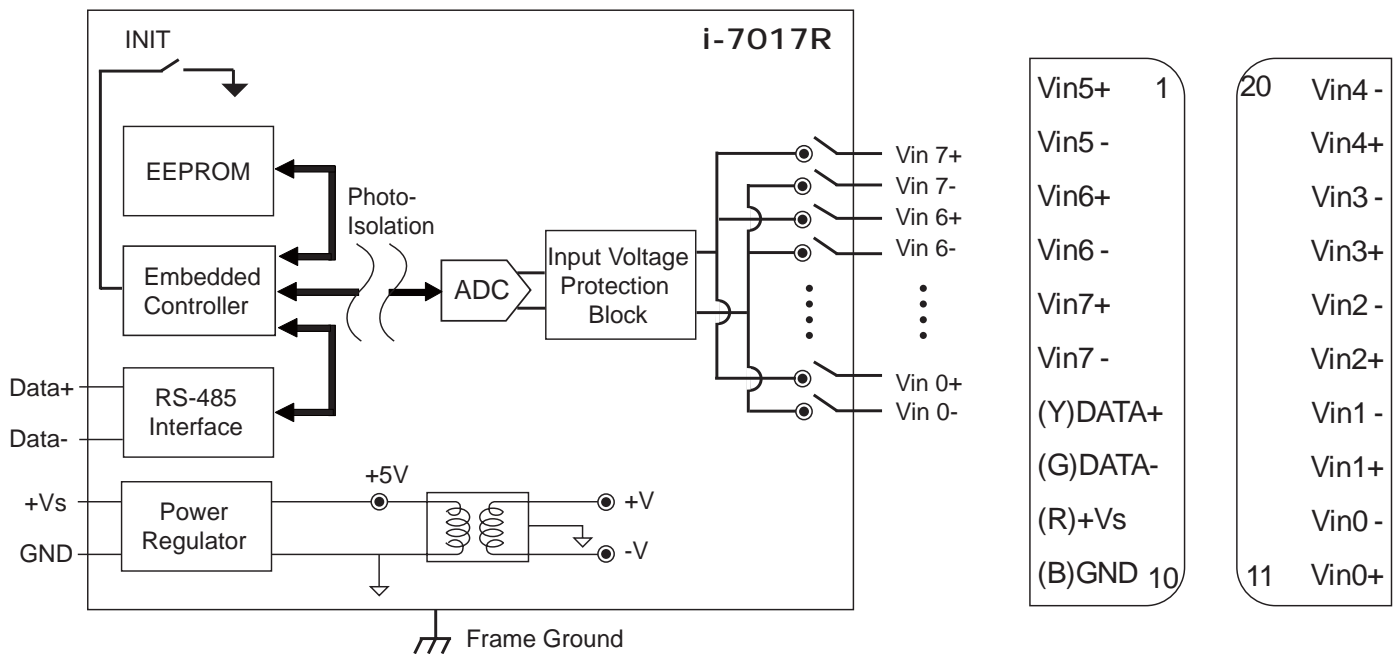
| ■ Analog Input | | | |
|---|--|-------------------------|---|
| Input channels | 8 Differential | Over voltage protection | 240Vrms |
| Input type | +/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA (requires optional external 125ohm resistor) | | |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total) | Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit |
| Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.5% of FSR or better | Band width | Normal Mode : 15.7Hz, Fast Mode : 78.7Hz |
| Zero drift | +/- 20µV/ °C | Common mode rejection | 86dB min. |
| Span drift | +/- 25 µV/ °C | Normal mode rejection | 100 dB |
| Input impedance | 2M Ohms | Photo-Isolation | 3750 Vrms |
| Intra-module isolation, Field to Logic : 3000 VDC | | 4KV ESD protection | Yes, Contact for each terminal |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator | | Input | +10 to +30 Vdc |
| | | Power consumption | 1.3W |

Note : i-7017R is more robust than i-7017/ 7017C/ 7017F/ 7017FC.

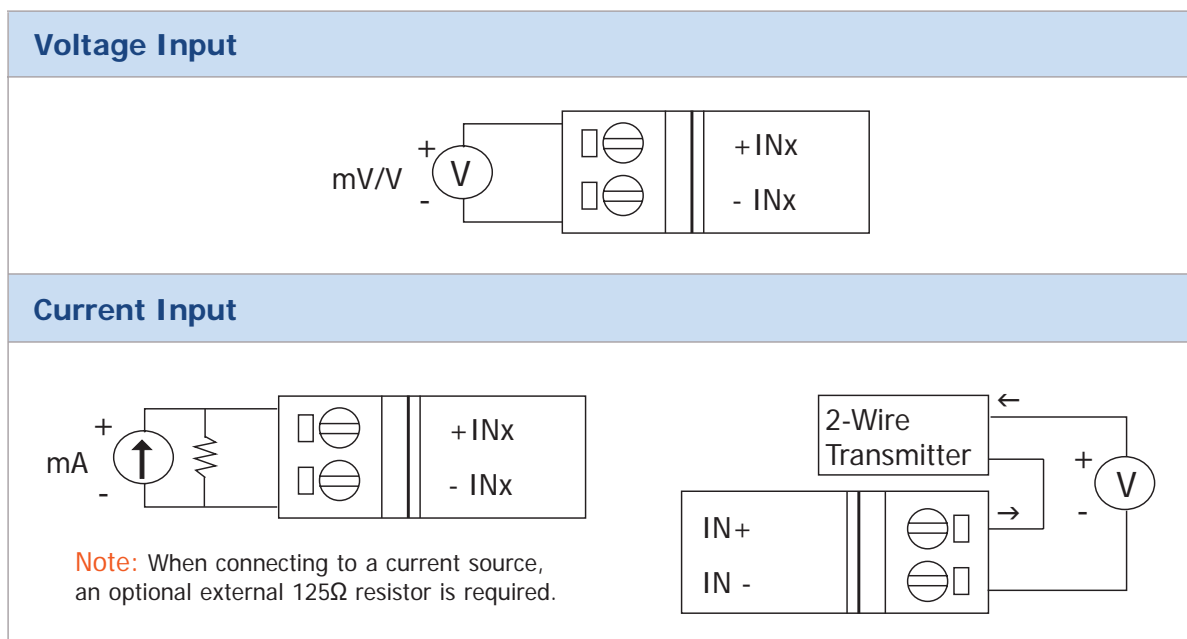
Ordering Information

| | |
|------------|---|
| i-7017R CR | 8-channel Analog Input Module with High Voltage Protection (RoHS) |
|------------|---|

Internal I/O Structure Pin Assignment



Wire Connection



i-7000 AI Modules



i-7017R-A5

Voltage

8-channel **High Voltage** Input Module



Description

- Measure V
- “R” means “Robust”. It has 240V high voltage overload protection. It also supports the fast mode as “F” model.



Specifications

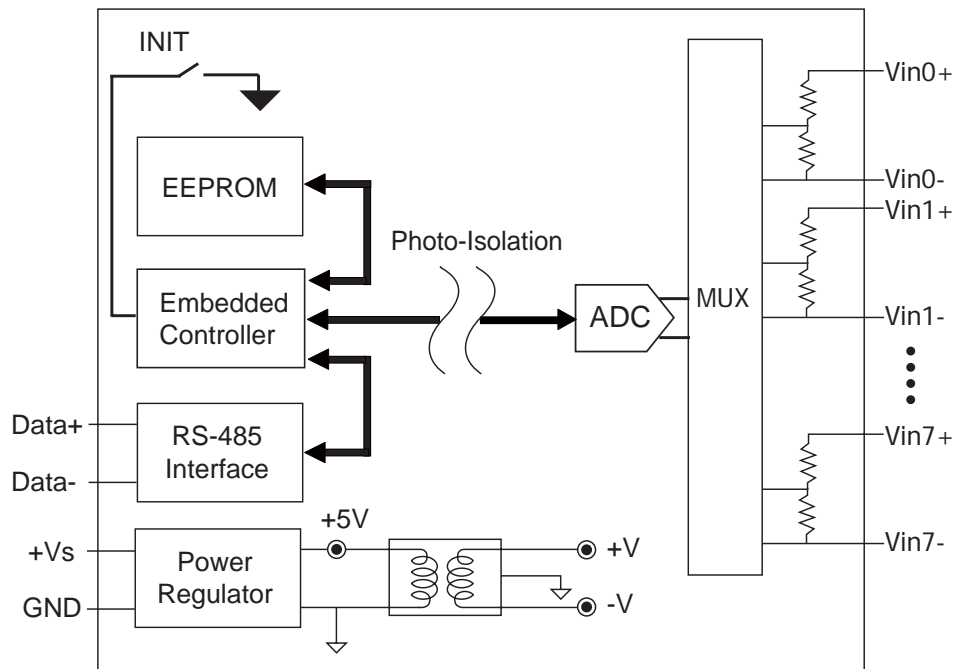
Analog Input

| | | | |
|--|--|--------------------------------|--|
| Input channels | 8 Differential | Input type | +/-50V, +/-150V DC |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 50 Sample/ sec (Total) | Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit |
| Accuracy | Normal Mode : +/- 0.1% of FSR or better Fast Mode : +/- 0.5% of FSR or better | Band width | Normal Mode : 15.7Hz , Fast Mode : 78.7Hz |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 86dB min. |
| Span drift | +/- 25ppm/°C | Normal mode rejection | 100 dB |
| Input impedance | 290K Ohms | Over voltage protection | 200V DC |
| Photo-Isolation | 3750 Vrms | 4KV ESD protection | Yes, Contact for each terminal |
| Intra-module isolation, Field to Logic : 3000V DC | | Power | |
| LED Display | | Input | +10 to +30 VDC |
| 1 LED as Power/ Communication Indicator | | Power consumption | Maximum : 1.7W |

Ordering Information

| | |
|-----------------|---|
| i-7017R-A5-G CR | 8-channel High Voltage Input Module (RoHS) with CA-5810 x 2 |
|-----------------|---|

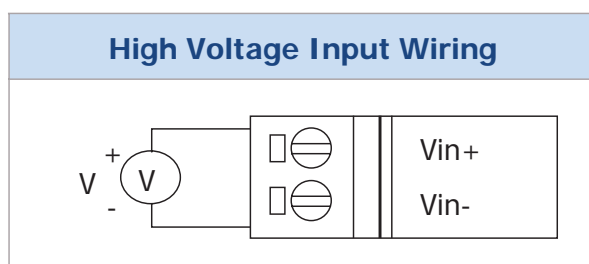
Internal I/O Structure



Pin Assignment

| | | | |
|----------|----|----|--------|
| Vin5+ | 1 | 20 | Vin4 - |
| Vin5 - | | | Vin4+ |
| Vin6+ | | | Vin3 - |
| Vin6 - | | | Vin3+ |
| Vin7+ | | | Vin2 - |
| Vin7 - | | | Vin2+ |
| (Y)DATA+ | | | Vin1 - |
| (G)DATA- | | | Vin1+ |
| (R)+Vs | | | Vin0 - |
| (B)GND | 10 | 11 | Vin0+ |

Wire Connection



| TYPE | SIGNAL |
|------|--------|
| 1B | ±150V |
| 1C | ±50V |



i-7000 AI Modules



i-7017RC

Voltage & Current

8-channel Current Input Module with High Common Voltage Protection



Description

- Measure mA
- “R” means “Robust”. It has high voltage overload protection. It also supports the fast mode as “F” model.
- “C” means the module is for +/-20mA “Current” inputs. No external resistor required.



Specifications

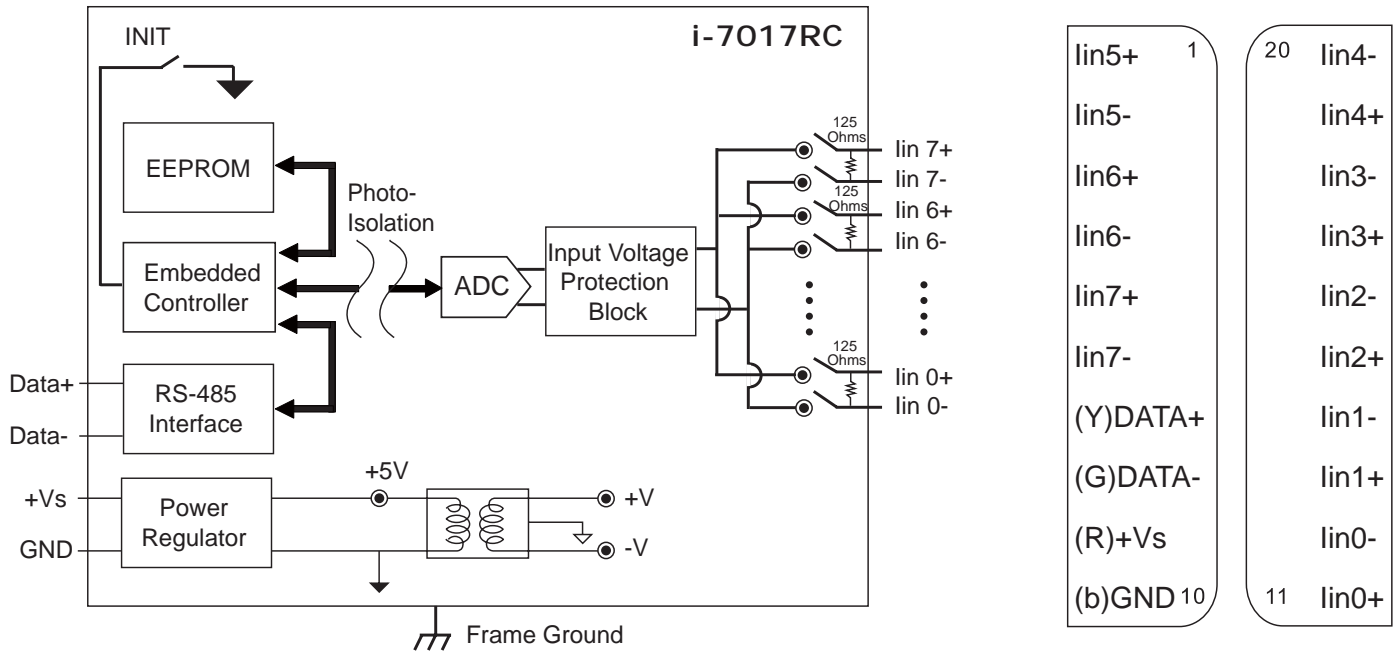
| ■ Analog Input | | | |
|---|---|-----------------------|--|
| Input channels | 8 Differential | Input type | +/-20mA, 0~20mA, 4~20mA |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total) | Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit |
| Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.5% of FSR or better | Band width | Normal Mode : 15.7Hz , Fast Mode : 78.7Hz |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 86dB min. |
| Span drift | +/- 25 μV/ °C | Normal mode rejection | 100 dB |
| Input impedance | 125 Ohms | Common voltage | +/-200VDC |
| Photo-Isolation | 3750 Vrms | 4KV ESD protection | Yes, Contact for each terminal |
| Intra-module isolation, Field to Logic : 3000 VDC | | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator | | Input | +10 to +30 VDC |
| | | Power consumption | Maximum : 1.3W |

Note: i-7017RC is more robust than i-7017/ 7017C/ 7017F/ 7017FC.

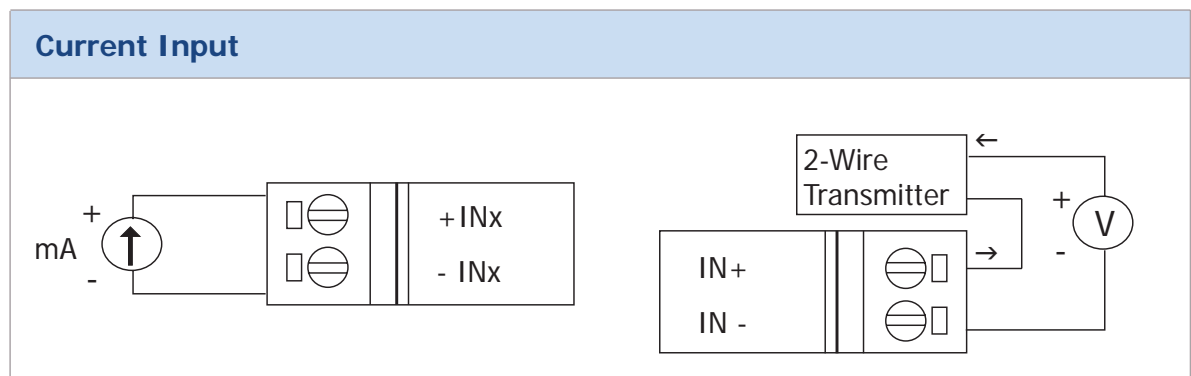
Ordering Information

| | |
|-------------|---|
| i-7017RC CR | 8-channel Current Input Module with High Common Voltage Protection (RoHS) |
|-------------|---|

Internal I/O Structure Pin Assignment



Wire Connection



i-7000 AI Modules



i-7017Z

Voltage & Current

10-channel Analog Input Module with **High Common Voltage Protection**



Description

- Measure V, mV, mA
- “Z” means 10-channel and individual channel configurable



Specifications

Analog Input

| | | | |
|---|---|--|--|
| Input channels | 10 differential or 20 single-ended, software selectable | Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit |
| Input type | +/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA ,0~20mA, 4~20mA (jumper selectable) | | |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total) | Band width | Normal Mode : 15.7Hz , Fast Mode : 78.7Hz |
| Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.5% of FSR or better | Over voltage protection | Differential: 240 Vrms, Single-ended: 150Vrms |
| Input impedance | Voltage: 2M Ohms(Differential), 1M Ohms(Single-ended) Current: 125 Ohms | ESD protection | 4KV Contact for each terminal, and 8KV Air for random point |
| ESD Protection | 4KV to Power, and 1KV to RS-485 | Intra-module isolation, Field to Logic : 3000 VDC | |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 86dB min. |
| Span drift | +/-25ppm/°C | Normal mode rejection | 100 dB |
| LED Display | | Power | |
| 1 LED as Power/ Communication Indicator | | Power consumption | 2.0W |

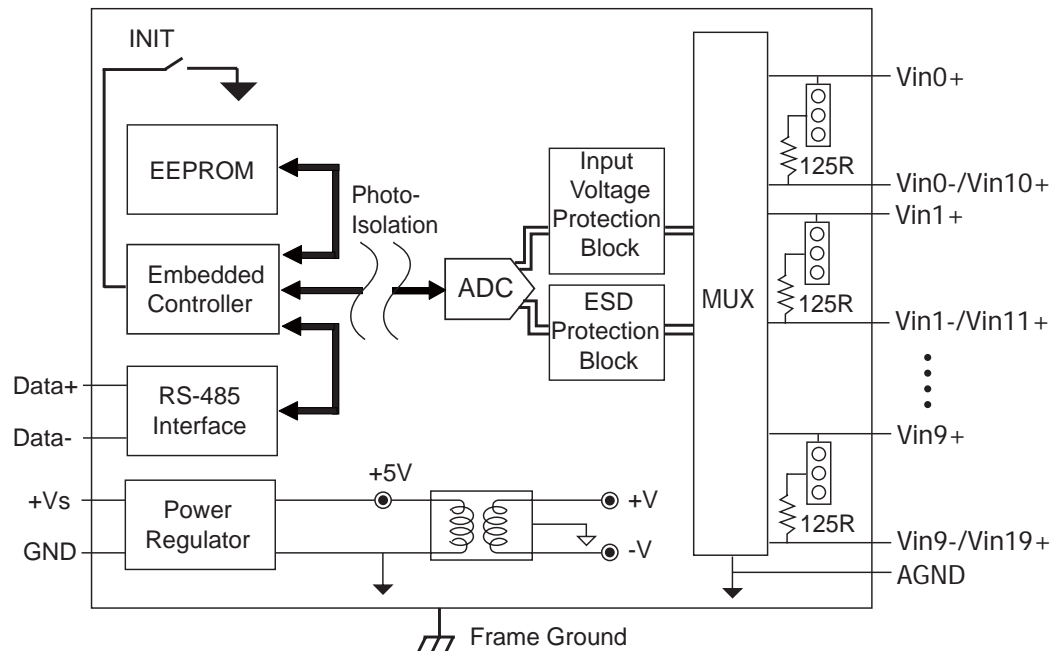
Note 1 : i-7017Z is more robust than i-7017/ 7017C/ 7017F/ 7017FC.

Note 2 : When use the current input, it only support 10- Channel differential.

Ordering Information

| | |
|------------|--|
| i-7017Z CR | 10-channel Analog Input Module with High Voltage Protection (RoHS) |
|------------|--|

Internal I/O Structure

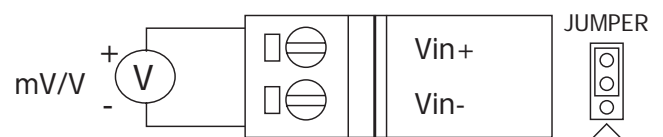


Pin Assignment

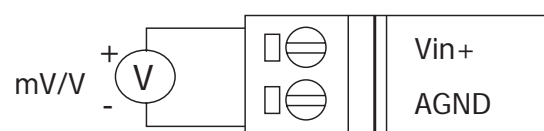
Wire Connection

| | | | |
|--------------|----|----|--------------|
| Vin6+ | 1 | 20 | AGND |
| Vin6-/Vin16+ | | | Vin5-/Vin15+ |
| Vin7+ | | | Vin5+ |
| Vin7-/Vin17+ | | | Vin4-/Vin14+ |
| Vin8+ | | | Vin4+ |
| Vin8-/Vin18+ | | | Vin3-/Vin13+ |
| Vin9+ | | | Vin3+ |
| Vin9-/Vin19+ | | | Vin2-/Vin12+ |
| AGND | | | Vin2+ |
| (Y)DATA+ | | | Vin1-/Vin11+ |
| (G)DATA- | | | Vin1+ |
| (R)+Vs | | | Vin0-/Vin10+ |
| (b)GND | 10 | 11 | Vin0+ |

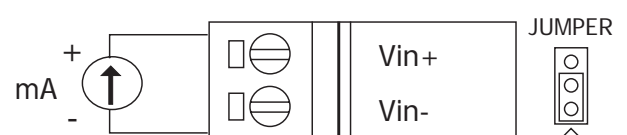
Voltage Input (Differential Mode)



Voltage Input (Single-ended Mode)



Current Input



i-7000 AI Modules



Thermocouple

One-channel Thermocouple Input Module



Description

- Measure V, mV, mA, temperature (with thermocouple sensor)
- "D" means LED Display
- "P" means supporting two more thermocouple types L and M



i-7011/P
i-7011D/PD

Specifications

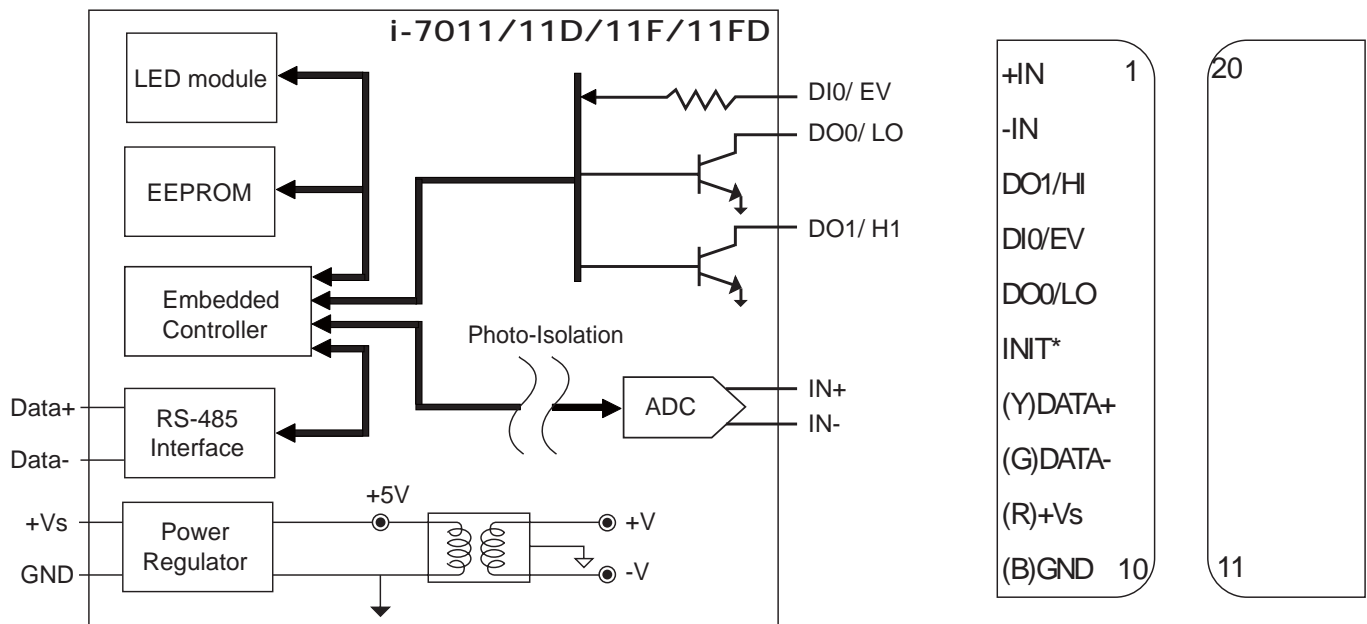
| ■ Analog Input | | | |
|---|--|-----------------------|--|
| Input channels | 1 | Input impedance | 20M Ohms |
| Input type | +/-15mV, +/-50mV, +/-100mV, +/- 500mV , +/-1V, +/- 2.5V +/- 20mA (requires optional external 125 ohm resistor) Thermocouple(Type J, K, T, E, R, S, B, N, C) , L, M for i-7011P/PD | | |
| Resolution | 16-bit | Sampling rate | 10 Samples/ Second |
| Accuracy | +/-0.05% | Band width | 5.24Hz |
| Zero drift | +/-0.5uV/°C | Common mode rejection | 150 dB |
| Span drift | 25ppm/°C | Normal mode rejection | 100 dB |
| Intra-module isolation, field to logic : 3000 VDC | | | |
| ■ Digital Input | | | |
| Input channels | 1 | Max input frequency | 50Hz |
| Logic level 0 | + 1V max | Min. pulse width | 1 ms |
| Logic level 1 | + 3.5V to 30V | | |
| ■ Digital Output | | | |
| Output channels | 2 | Output type | Sink, Open Collector to 30V |
| Output load | 30mA max per channel | Power dissipation | 300 mw |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 4 1/2 digits (for i-7011D/ 11PD) | | Power consumption | 0.9W (i-7011/11P) 1.5W (i-7011D/11PD) |

Ordering Information

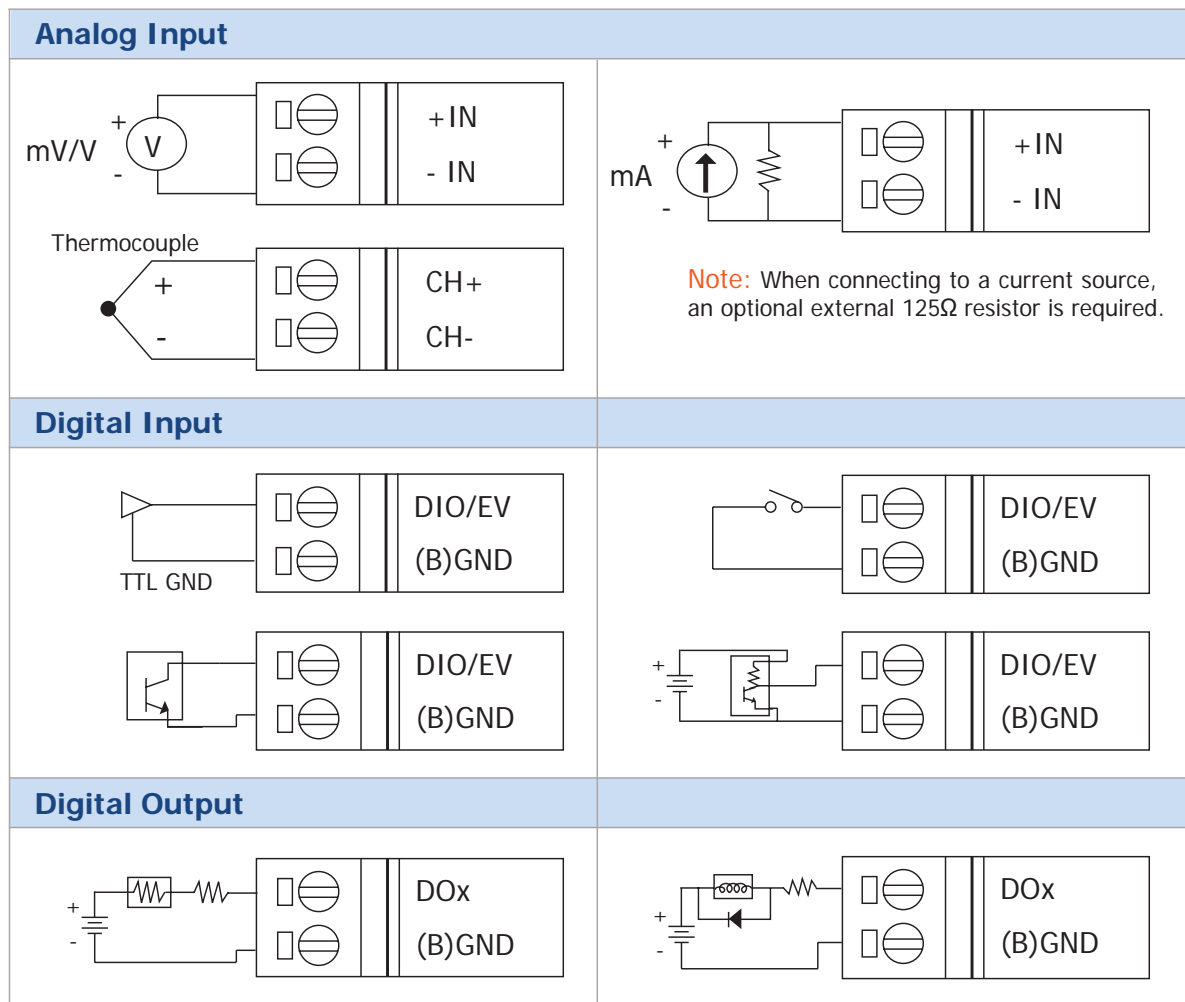
| | |
|------------|--|
| i-7011/11P | One-channel Thermocouple Input Module |
| i-7011D/PD | One-channel Thermocouple Input Module with LED Display |

Internal I/O Structure

Pin Assignment



Wire Connection



i-7000 AI Modules



i-7018R

Thermocouple

8-channel Analog Input Module with **High Voltage Protection**



Description

- Measure V, mV, mA, temperature (with thermocouple sensor)
- “R” means “Robust”. It has 240V high voltage overload protection.



Specifications

| ■ Analog Input | | | |
|---|--|-------------------------|--------------------------------|
| Input channels | 8 Differential | Over voltage protection | 240Vrms |
| Input type | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V +/-20mA (requires optional external 125 ohm resistor) Thermocouple Type J, K, T, E, R, S, B, N, C, L, M | | Resolution : 16-bit |
| Sampling rate | 10 Samples/ Second | Band width | 15.7Hz |
| Accuracy | +/- 0.1% | Common mode rejection | 86dB min. |
| Zero drift | +/- 10μV/ °C | Normal mode rejection | 100 dB |
| Span drift | 25ppm/°C | Photo-Isolation | 3750 Vrms |
| Input impedance | 1M Ohms | Open wire detection | Yes |
| Intra-module isolation, Field to Logic : 3000 VDC | | 4KV ESD protection | Yes, Contact for each terminal |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator | | Input Power consumption | +10 to +30 Vdc 1.0W |

Note : i-7018R is more robust than i-7018/ 7018P/ 7018BL

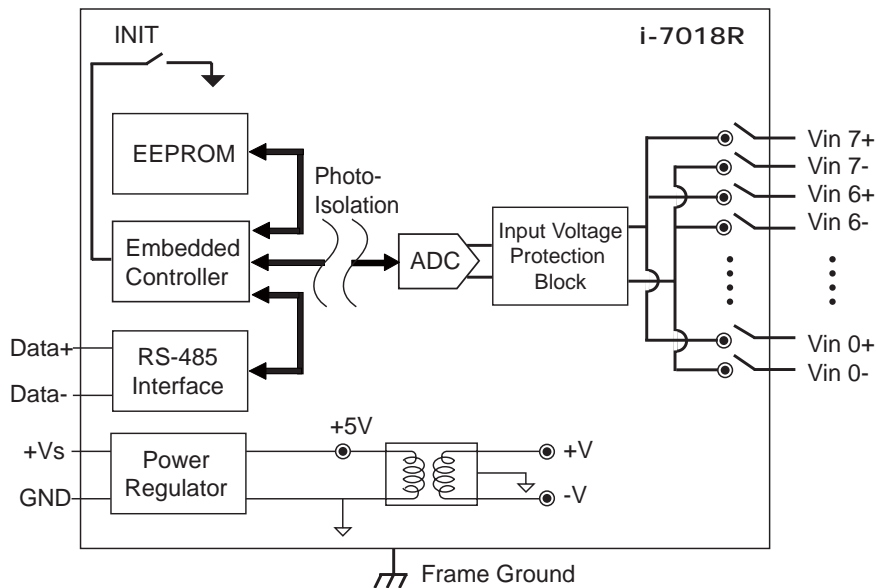
Note : We recommend to choose **i-7018Z** for accurate thermocouple measurement.

Ordering Information

| | |
|------------|---|
| i-7018R CR | 8-channel Analog Input Module with High Voltage Protection (RoHS) |
|------------|---|

Internal I/O Structure

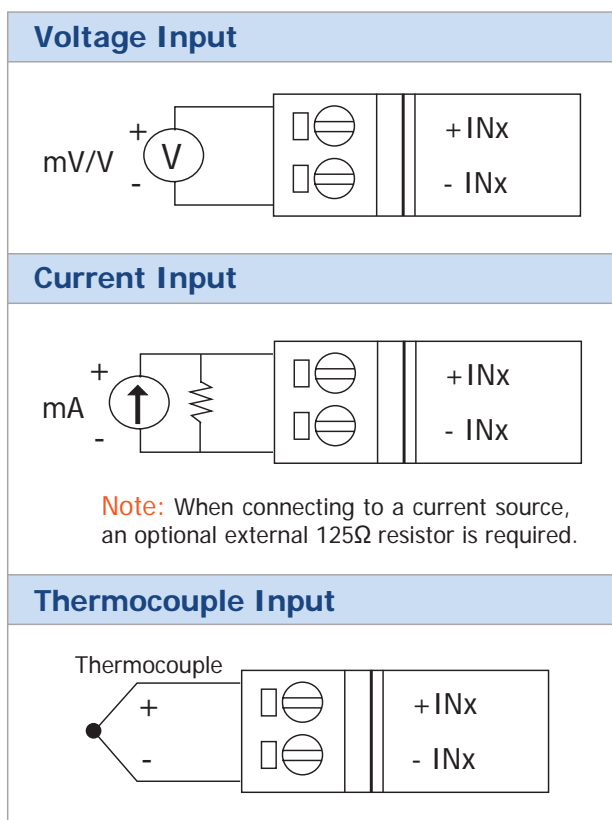
Pin Assignment



| | | | |
|----------|----|----|--------|
| Vin5+ | 1 | 20 | Vin4 - |
| Vin5 - | | | Vin4+ |
| Vin6+ | | | Vin3 - |
| Vin6 - | | | Vin3+ |
| Vin7+ | | | Vin2 - |
| Vin7 - | | | Vin2+ |
| (Y)DATA+ | | | Vin1 - |
| (G)DATA- | | | Vin1+ |
| (R)+Vs | | | Vin0 - |
| (B)GND | 10 | 11 | Vin0+ |

Wire Connection

Thermocouple Type



| Type | Range°C |
|--------------|--------------|
| J | -210 ~ +760 |
| K | -270 ~ +1372 |
| T | -270 ~ +400 |
| E | -270 ~ +1000 |
| R | 0 ~ +1768 |
| S | 0 ~ +1768 |
| B | 0 ~ +1820 |
| N | -270 ~ 1300 |
| C | 0 ~ 2320 |
| L | -200 ~ +800 |
| M | -200 ~ +100 |
| L (DIN43710) | -200 ~ +900 |



i-7000 AI Modules



i-7018Z DB-1820



Thermocouple

10-channel Thermocouple Input Module with **High Voltage Protection**



Description

- Measure V, mV, mA, temperature (with thermocouple sensor)
- “Z” means 10-channel and individual configurable
- Ambient Temperature will NOT influence temperature reading.



Specifications

Analog Input

| | | | |
|--|--|----------------------------------|--------------------------------|
| Input channels | 10 Differential | Resolution | 16-bit |
| Input type | +/- 15mV, +/- 50mV, +/- 100mV, +/- 500mV, +/- 1V, +/- 2.5V, +/-20mA, 0~20mA, 4~20mA (Requires Optional External 125 Ohm Resistor) Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710) | | |
| Sampling rate | 10 Samples/ sec (Total) | Overvoltage protection | 240 Vrms |
| Zero drift | +/- 0.5µV/ °C | Common mode rejection | 150 dB |
| Span drift | +/- 25 ppm/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 15.7Hz | Input impedance | 20M Ohms |
| Accuracy | +/- 0.1% | Open wire detection | Yes |
| Photo-Isolation | 3750Vrms | Individual channel configuration | Yes |
| Intra-module isolation, Field to Logic : | 3000 VDC | 4KV ESD protection | Yes, Contact for each terminal |

DB-1820

| | | | |
|-------------------|---|------------|-----------|
| Wire strip length | 4~5mm | Wire range | 16~24 AWG |
| LED Display | 1 LED as Power/ Communication Indicator | | |
| Power | Power consumption 1.0W | | |

Ordering Information

| | |
|----------------|---|
| i-7018Z-G/S CR | 10-channel Thermocouple Input Module (RoHS) include i-7018Z module and DB-1820 daughter board |
|----------------|---|

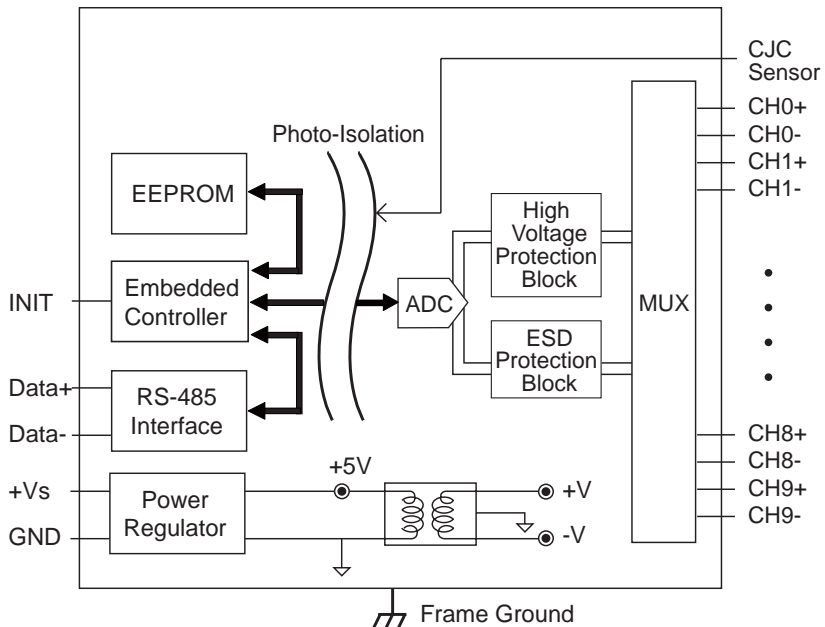
Suggested Accessory

| | |
|----------|---|
| CD-2518D | 25F-25M 1.8m cable with DIN-Rail Mount of DB-1820 |
| CD-25015 | 25F-25M 15cm cable with DIN-Rail Mount of DB-1820 |



Internal I/O Structure

Pin Assignment For i-7018Z



| Name | Terminal No. | Name |
|------|--------------|-------------|
| +5V | 01 | 14 AGND |
| CJC | 02 | 15 CH0+ |
| CH0- | 03 | 16 CH1+ |
| CH1- | 04 | 17 CH2+ |
| CH2- | 05 | 18 CH3+ |
| CH3- | 06 | 19 CH4+ |
| CH4- | 07 | 20 CH5+ |
| CH5- | 08 | 21 CH6+ |
| CH6- | 09 | 22 CH7+ |
| CH7- | 10 | 23 CH8+ |
| CH8- | 11 | 24 CH9+ |
| CH9- | 12 | 25 N.C. |
| N.C. | 13 | Shield F.G. |

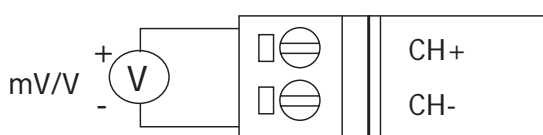
25-Pin Female D-Sub Connector

Wire Connection

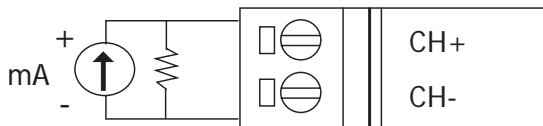
Thermocouple Type

Pin Assignment For DB-1820

Voltage Input

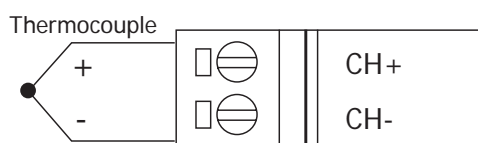


Current Input



Note: When connecting to a current source, an optional external 125Ω resistor is required.

Thermocouple Input



| Type | Range °C |
|--------------|--------------|
| J | -210 ~ +760 |
| K | -270 ~ +1372 |
| T | -270 ~ +400 |
| E | -270 ~ +1000 |
| R | 0 ~ +1768 |
| S | 0 ~ +1768 |
| B | 0 ~ +1820 |
| N | -270 ~ 1300 |
| C | 0 ~ 2320 |
| L | -200 ~ +800 |
| M | -200 ~ +100 |
| L (DIN43710) | -200 ~ +900 |

| NO. | Name | NO. | Name |
|-----|------|-----|------|
| 1 | F.G. | 13 | F.G. |
| 2 | AGND | 14 | AGND |
| 3 | CH0+ | 15 | CH5+ |
| 4 | CH0- | 16 | CH5- |
| 5 | CH1+ | 17 | CH6+ |
| 6 | CH1- | 18 | CH6- |
| 7 | CH2+ | 19 | CH7+ |
| 8 | CH2- | 20 | CH7- |
| 9 | CH3+ | 21 | CH8+ |
| 10 | CH3- | 22 | CH8- |
| 11 | CH4+ | 23 | CH9+ |
| 12 | CH4- | 24 | CH9- |

i-7000 AI Modules



i-7019R i-7019R-G

Thermocouple

8-channel Universal Analog Input Module with **High Voltage Protection**



Description

- Measure V, mV, mA, temperature (with thermocouple sensor)
- "G" means gray color



Introduction

i-7019R provides 4KV of ESD protection. The individual channels are configurable; the user selects the type and range remotely by issuing commands from the host. Fewer modules may be used for different applications. The user may mount the modules on a DIN rail, panel or wall. Modules have a screw-terminal block to connect to the signals. i-7019R comes with FREE EZ Data Logger Software.

Specifications

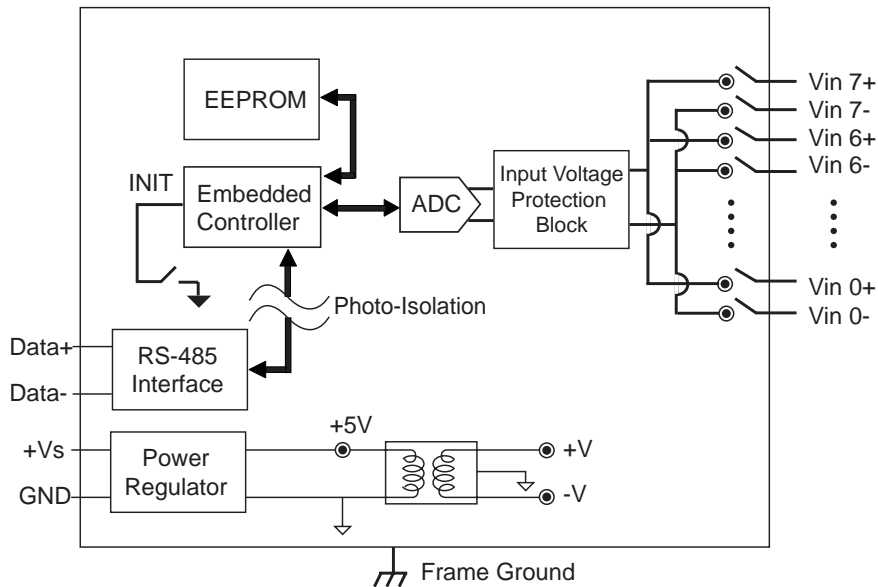
| ■ Analog Input | | | |
|---|---|----------------------------------|----------------|
| Input channels | 8 differential | Resolution | 16-bit |
| Input type | +/-15mV, +/-50mV, +/-100mV, +/-150mV, +/-500mV, +/-1V, +/-2.5V, +/-5V, +/-10V +/-20mA (Jumper Selectable) Thermocouple Type J, K, T, E, R, S, B, N, C, L, M | | |
| Sampling rate | 8 samples/ second (Total) | Over voltage protection | 240 Vrms |
| Zero drift | 0.5uV/°C | Common mode rejection | 86dB |
| Span drift | 25 ppm/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 5.24Hz | Input impedance | >2M Ohms |
| Accuracy | +/- 0.1% | Open wire detection | Yes |
| Intra-module isolation, Field to Logic : 3000 VDC | | Individual channel configuration | Yes |
| 4KV ESD protection | Yes, Contact for each terminal | ■ Power | |
| ■ LED Display | | Input | +10 to +30 Vdc |
| 1 LED as Power/ Communication Indicator | | Power consumption | 1.2W |

Ordering Information

| | |
|--------------|--|
| i-7019R CR | 8-channel universal Analog Input Module with High voltage Protection (Blue Cover) (RoHS) |
| i-7019R-G CR | 8-channel universal Analog Input Module with High voltage Protection (Gray Cover) (RoHS) |

Internal I/O Structure

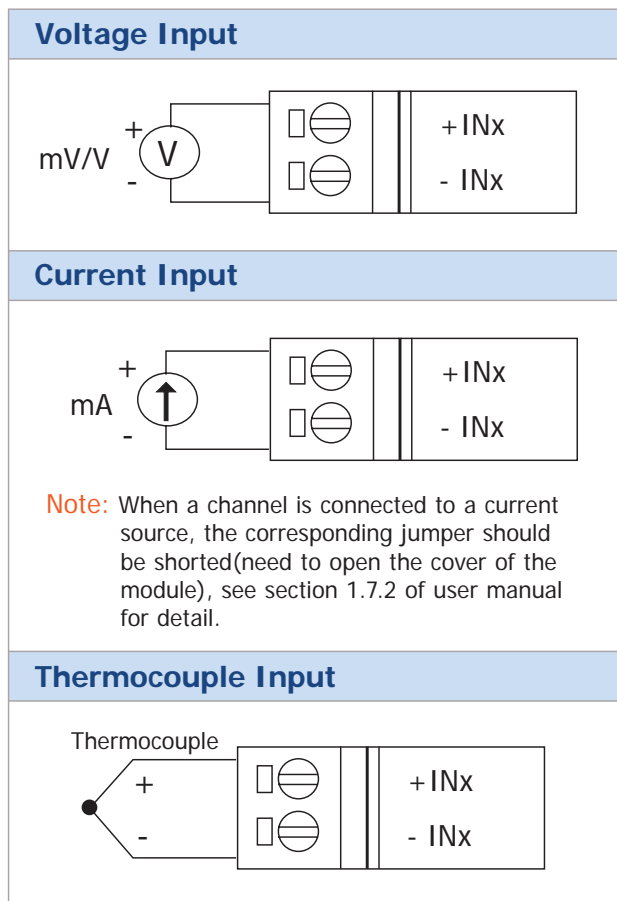
Pin Assignment



| | | | |
|----------|----|----|--------|
| Vin5+ | 1 | 20 | Vin4 - |
| Vin5 - | | | Vin4+ |
| Vin6+ | | | Vin3 - |
| Vin6 - | | | Vin3+ |
| Vin7+ | | | Vin2 - |
| Vin7 - | | | Vin2+ |
| (Y)DATA+ | | | Vin1 - |
| (G)DATA- | | | Vin1+ |
| (R)+Vs | | | Vin0 - |
| (B)GND | 10 | 11 | Vin0+ |

Wire Connection

Thermocouple Type



| Type Code | Type | Range °C |
|-----------|--------------|--------------|
| 0E | J | -210 ~ +760 |
| 0F | K | -270 ~ +1372 |
| 10 | T | -270 ~ +400 |
| 11 | E | -270 ~ +1000 |
| 12 | R | 0 ~ +1768 |
| 13 | S | 0 ~ +1768 |
| 14 | B | 0 ~ +1820 |
| 15 | N | -270 ~ 1300 |
| 16 | C | 0 ~ 2320 |
| 17 | L | -200 ~ +800 |
| 18 | M | -200 ~ +100 |
| 19 | L2(DIN43710) | -200 ~ +900 |



i-7000 AI Modules

RTD

6-channel RTD Input Module



i-7015
i-7015G

Description

- Measure temperature with RTD sensor
- “G” means gray color
- Support open wire detection



Specifications

Pin Assignment

Analog Input

| | |
|-------------------------|-------------------------------------|
| Input channels | 6 |
| Input type | RTD |
| Wire connection | 2/3 Wire RTD |
| RTD type | Pt100, Pt1000, Ni120, Cu100, Cu1000 |
| Resolution | 16-bit |
| Sampling rate | 12 samples/ second (Total) |
| Accuracy | +/-0.05% |
| -3dB bandwidth | 5.24 Hz |
| Zero drift | +/-20uV/°C |
| Span drift | +/-25ppm/°C |
| Common mode rejection | Typical 86dB |
| Normal mode rejection | 100 dB |
| Voltage input impedance | >1M Ohms |
| Open wire detection | Yes |
| 4KV ESD Protection | Yes, Contact for each terminal. |

Individual channel configurable : Yes

Intra-module isolation, field to logic : 3000Vdc

Power

Power consumption 1.1W

LED Display

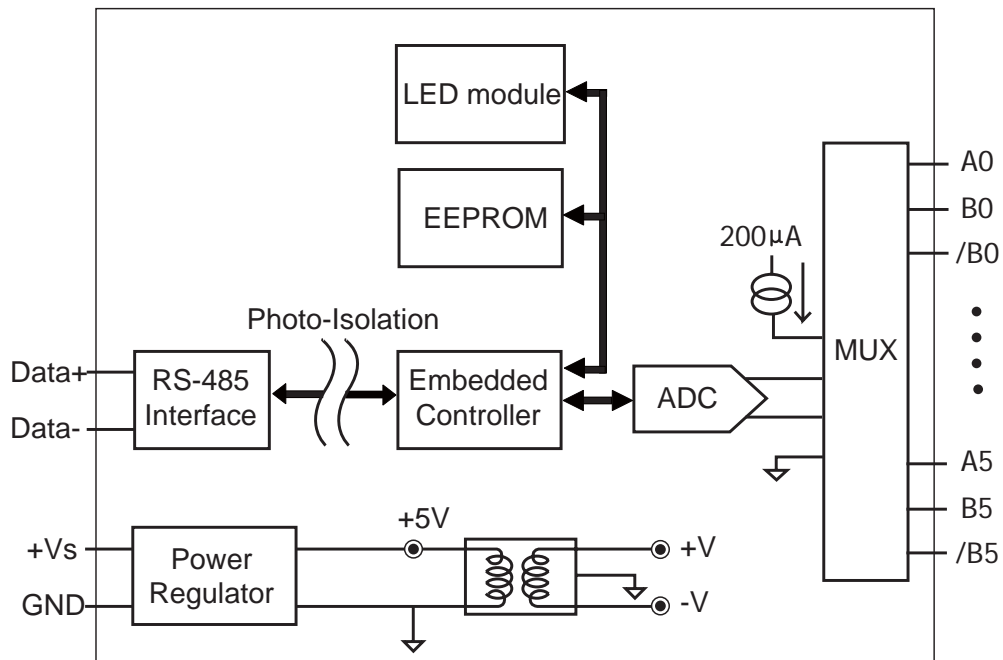
1 LED as Power/ Communication Indicator

| | | | |
|-----------|---|----|-----|
| B4 | 1 | 26 | /B4 |
| A4 | | | /B3 |
| /B5 | | | B3 |
| B5 | | | A3 |
| A5 | | | /B2 |
| (Y)DATA+ | | | B2 |
| (G)DATA- | | | A2 |
| (R)+Vs | | | /B1 |
| (B)GND | | | B1 |
| (Y)DATA+ | | | A1 |
| (G)DATA- | | | /B0 |
| (R)+Vs | | | B0 |
| (B)GND 13 | | 14 | A0 |

Ordering Information

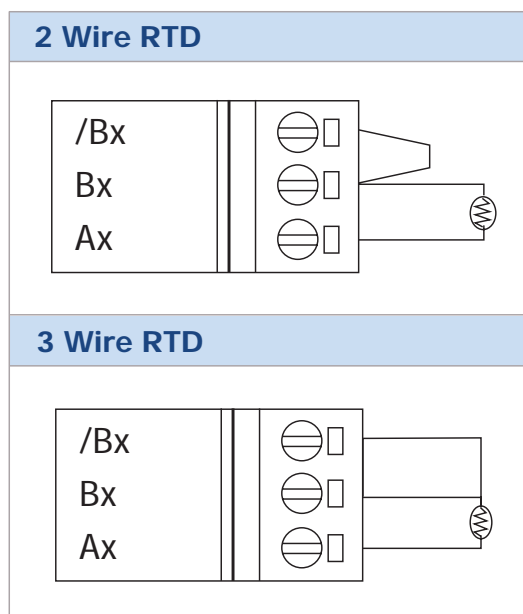
| | |
|-------------|--|
| i-7015 CR | 6-channel RTD Input Module (RoHS) |
| i-7015-G CR | 6-channel RTD Input Module (Gray cover) (RoHS) |

Internal I/O Structure



Wire Connection

RTD Type



| Type Code | Type | Range °C |
|-----------|------------------------------------|-----------|
| 20 | Platinum 100, $\alpha = 0.00385$ | -100~100 |
| 21 | Platinum 100, $\alpha = 0.00385$ | 0~100 |
| 22 | Platinum 100, $\alpha = 0.00385$ | 0~200 |
| 23 | Platinum 100, $\alpha = 0.00385$ | 0~600 |
| 24 | Platinum 100, $\alpha = 0.003916$ | -100~100 |
| 25 | Platinum 100, $\alpha = 0.003916$ | 0~100 |
| 26 | Platinum 100, $\alpha = 0.003916$ | 0~200 |
| 27 | Platinum 100, $\alpha = 0.003916$ | 0~600 |
| 28 | Nickel 120 | -80~100 |
| 29 | Nickel 120 | 0~100 |
| 2A | Platinum 1000, $\alpha = 0.00385$ | -200~600 |
| 2B | Cu 100 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2C | Cu 100 at 25°C, $\alpha = 0.00427$ | 0~200 |
| 2D | Cu 1000 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2E | PT 100, $\alpha = 0.00385$ | -200~200 |
| 2F | PT 100, $\alpha = 0.003916$ | -200~200 |
| 80 | PT 100, $\alpha = 0.00385$ | -200~600 |
| 81 | PT 100, $\alpha = 0.003916$ | -200~600 |



i-7000 AI Modules



i-7015P

RTD

6-channel RTD Input Module with
3-wire RTD lead resistance elimination



Description

- Measure temperature with RTD sensor
- “G” means gray color
- Support open wire detection



Specifications

Pin Assignment

Analog Input

| | |
|--|---|
| Input channels | 6 |
| Input type | RTD |
| Wire connection | 2/3 Wire RTD |
| RTD type | Pt100, Pt1000, Ni120, Cu100, Cu1000 |
| Resolution | 16-bit |
| Sampling rate | 12 samples/ second (Total) |
| Accuracy | +/-0.05% |
| -3dB bandwidth | 15.7Hz |
| Zero drift | +/-0.5μV/°C |
| Span drift | +/-20μV/°C |
| Common mode rejection | 150 dB |
| Normal mode rejection | 100 dB |
| Voltage input impedance | >1M Ohms |
| Open wire detection | Yes |
| ESD Protection | 4KV Contact for each terminal, and 8KV Air for random point |
| EFT Protection | 4KV to Power, and 1KV to RS-485 |
| 3-wire RTD lead resistance elimination : Yes | |
| Individual channel configurable : Yes | |
| Intra-module isolation, field to logic : 3000Vdc | |

Power

| | |
|-------------------|------|
| Power consumption | 1.2W |
|-------------------|------|

LED Display

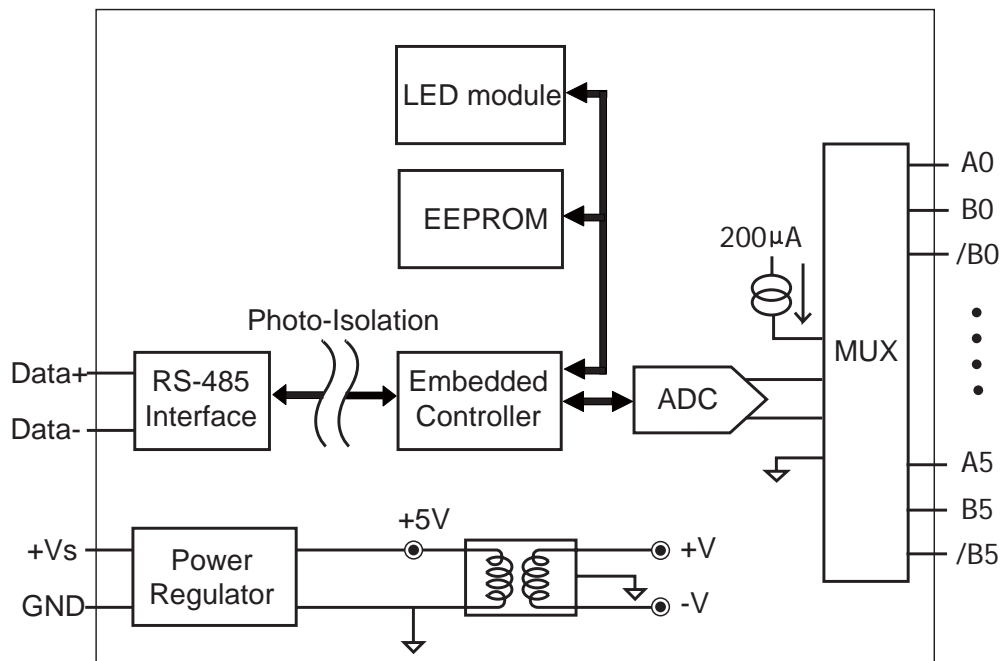
1 LED as Power/ Communication Indicator

| | | | |
|-----------|---|----|-----|
| B4 | 1 | 26 | /B4 |
| A4 | | | /B3 |
| /B5 | | | B3 |
| B5 | | | A3 |
| A5 | | | /B2 |
| (Y)DATA+ | | | B2 |
| (G)DATA- | | | A2 |
| (R)+Vs | | | /B1 |
| (B)GND | | | B1 |
| (Y)DATA+ | | | A1 |
| (G)DATA- | | | /B0 |
| (R)+Vs | | | B0 |
| (B)GND 13 | | 14 | A0 |

Ordering Information

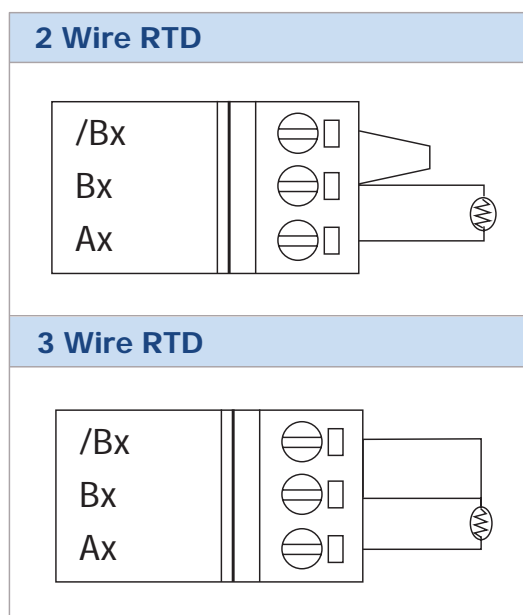
| | |
|--------------|---|
| i-7015P-G CR | 6-channel RTD Input Module with 3-wire RTD lead resistance elimination (RoHS) |
|--------------|---|

Internal I/O Structure



Wire Connection

RTD Type



| Type Code | Type | Range °C |
|-----------|------------------------------------|-----------|
| 20 | Platinum 100, $\alpha = 0.00385$ | -100~100 |
| 21 | Platinum 100, $\alpha = 0.00385$ | 0~100 |
| 22 | Platinum 100, $\alpha = 0.00385$ | 0~200 |
| 23 | Platinum 100, $\alpha = 0.00385$ | 0~600 |
| 24 | Platinum 100, $\alpha = 0.003916$ | -100~100 |
| 25 | Platinum 100, $\alpha = 0.003916$ | 0~100 |
| 26 | Platinum 100, $\alpha = 0.003916$ | 0~200 |
| 27 | Platinum 100, $\alpha = 0.003916$ | 0~600 |
| 28 | Nickel 120 | -80~100 |
| 29 | Nickel 120 | 0~100 |
| 2A | Platinum 1000, $\alpha = 0.00385$ | -200~600 |
| 2B | Cu 100 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2C | Cu 100 at 25°C, $\alpha = 0.00427$ | 0~200 |
| 2D | Cu 1000 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2E | PT 100, $\alpha = 0.00385$ | -200~200 |
| 2F | PT 100, $\alpha = 0.003916$ | -200~200 |
| 80 | PT 100, $\alpha = 0.00385$ | -200~600 |
| 81 | PT 100, $\alpha = 0.003916$ | -200~600 |



i-7033 i-7033D

Description

- Measure temperature with RTD sensor
- “D” means it has LED display
- Support open wire detection



Specifications

Pin Assignment

Analog Input

| | |
|-----------------------|---|
| Input channels | 3 |
| Input type | RTD |
| Wire connection | 2/3/4 wire |
| RTD type | Pt100 $\alpha=0.00385$, Pt100 $\alpha=0.003916$, Ni120, Pt1000 $\alpha=0.00385$ |
| Resolution | 16-bit |
| Sampling rate | 15/12.5 samples/ second while filter at 60/ 50Hz |
| Accuracy | +/-0.1% |
| Band width | 15.7Hz |
| Zero drift | +/- 0.5 $\mu V/ ^\circ C$ |
| Span drift | +/- 25 $\mu V/ ^\circ C$ |
| Common mode rejection | 150 dB min. |
| Normal mode rejection | 100 dB min. |
| Open wire detection | Yes |

Intra-module isolation, Field to Logic : 3000Vdc

Power

| | |
|-------------------|---------------------------------|
| Power consumption | 1.0 W (i-7033) / 1.6W (i-7033D) |
|-------------------|---------------------------------|

LED Display

1 LED as Power/ Communication Indicator
4 1/2 digits (for i-7033D)

| | | | |
|----------|----|----|---------|
| +IEXC2 | 1 | 20 | A.GND |
| +SENSE2 | | | -IEXC1 |
| -SENSE2 | | | -SENSE1 |
| -IEXC2 | | | +SENSE1 |
| A.GND | | | +IEXC1 |
| INIT* | | | A.GND |
| (Y)DATA+ | | | -IEXC0 |
| (G)DATA- | | | -SENSE0 |
| (R)+Vs | | | +SENSE0 |
| (B)GND | 10 | 11 | +IEXC0 |

Ordering Information

| | |
|------------|--|
| i-7033 CR | 3-channel RTD Input Module (RoHS) |
| i-7033D CR | 3-channel RTD Input Module with LED display (RoHS) |

i-7000 AI Modules



i-7005
i-7005G

Thermistor

8-channel Thermistor Input and 6-channel Alarm Output Module



- **Description**
- Measure temperature with thermistor sensor
- “G” means gray color
- Support open wire detection



Introduction

The i-7005 module provides cost-effective protection and conditioning for a wide range of valuable industrial control signals and systems. The input type is configurable; the user selects the type and range remotely by issuing commands from the host. Fewer modules may be used for different applications. The user may mount the modules on a DIN rail, panel or wall. Module has a screw-terminal block to connect to the signals. i-7005 comes with FREE EZ Data Logger Software.

Specifications

| ■ Analog Input | | | |
|---|--|---|---------------------|
| Input channels | 8 Differential | Input type | Thermistor |
| Thermistor type | Precon ST-A3, Fenwell U, YSI L100, YSI L300, YSI L1000, YSI B2252, YSI B3000, YSI B5000, YSI B6000, YSI B10000, YSI H10000, YSI H30000, User-defined | | Resolution : 16-bit |
| Sampling rate | 8 samples/second (Total) | Band width | 15.7Hz |
| Accuracy | +/- 0.1% | Common mode rejection | 86 dB |
| Zero drift | +/-20uV/°C | Normal mode rejection | 100 dB |
| Span drift | +/-25 ppm/°C | Photo-Isolation | 3750 Vrms |
| Input impedance | >1M Ohms | Open wire detection | Yes |
| Intra-module isolation, Field to Logic : 3000 VDC | | Individual channel configurable : Yes | |
| ■ Digital Output | | ■ Power | |
| Output channels | 6 | Power consumption | 1.1W |
| Output load | 100mA max. per channel | ■ LED Display | |
| Output type | NPN, Sink, Open Collector to 30V | 1 LED as Power/ Communication Indicator | |

i-7000 AI Modules

Transmitter

Analog/Transmitter Input with LED Display



Description

- Measure voltage and current with scaling
- "D" means LED Display



i-7014D



Specifications

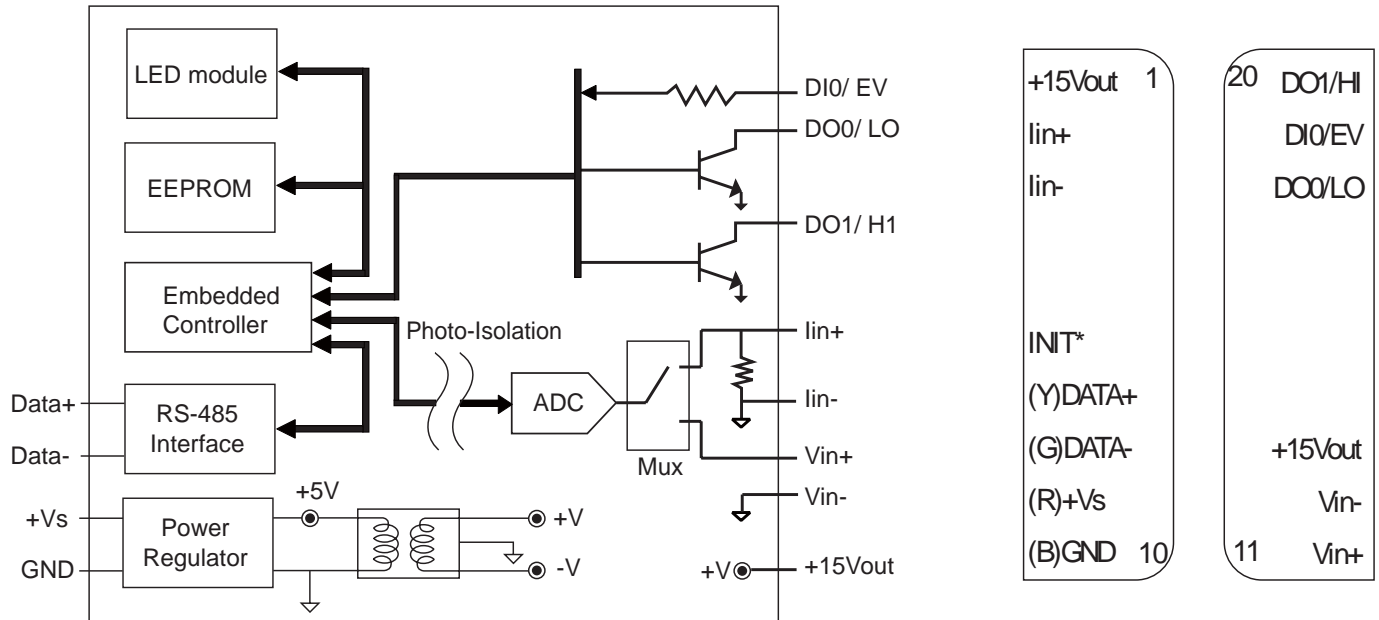
| ■ Analog Input | | ■ Digital Input | |
|---------------------|--|-------------------|-----------------------------|
| Input channels | 1 | Channels | 1 |
| Input type | +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V and +/-20mA | Logic level 0 | +1V Max |
| Resolution | 16-bit | Logic level 1 | 3.5V to 30V |
| Sampling rate | 10 samples/ second | Input frequency | 50Hz max |
| Band width | 5.24 Hz | Input pulse width | 1mS min. |
| Accuracy | +/- 0.05% or better | ■ Digital Output | |
| Zero drift | +/- 20µV/ °C | Output channels | 2 |
| Isolated loop power | +15Vdc @ 30mA | Output type | Sink, Open Collector to 30V |
| Add Input Impedance | Voltage Input : 30K Ohms Current Input : 125 Ohms | Output load | 30mA |
| ■ Power | | ■ LED Display | |
| Power consumption | 1.9W | | 4 1/2 digits |

Ordering Information

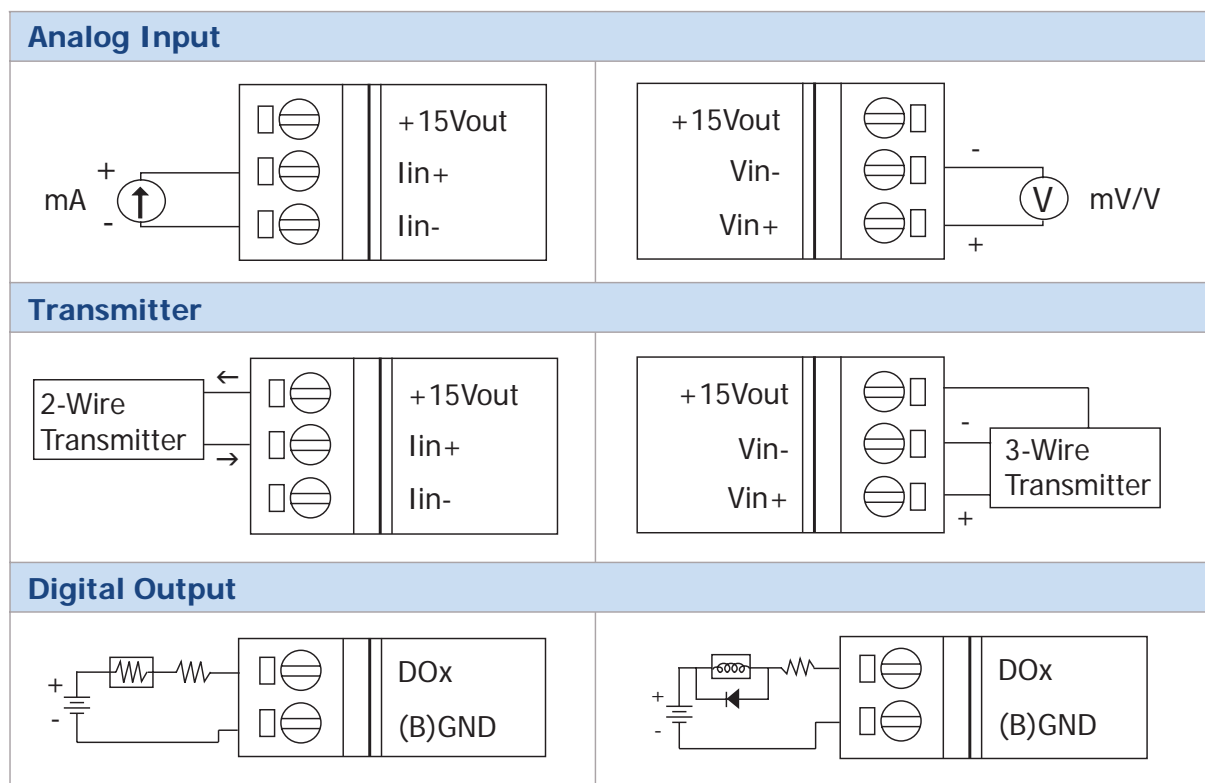
| | |
|------------|--|
| i-7011D CR | Analog Transmitter Input with LED Display (RoHS) |
|------------|--|

Internal I/O Structure

Pin Assignment



Wire Connection





i-7000 AI Modules

Strain Gauge

i-7016 : 2-channel Strain Gauge Input Module
i-7016P: 1-channel Strain Gauge Input Module

Description



- Measure strain
- "D" means LED Display
- i-7016P versions are One Channel with 6 Wire Strain Gauge Input



i-7016/P i-7016D/PD

Specifications

Analog Input

| | | | |
|-----------------|---|---|--------|
| Input channels | 2/ 1 (for i-7016P) | Resolution | 16-bit |
| Input type | +/-15mV, +/-50mV, +/-100mV, +/- 500mV , +/-1V, +/- 2.5V, +/- 20mA | | |
| Sampling rate | 10 Samples/ Second (one-channel mode), 2 Samples/ Second (two-channel mode) | | |
| Accuracy | +/-0.05% | Band width | 5.24Hz |
| Zero drift | +/-0.5uV/°C | Common mode rejection | 150 dB |
| Span drift | 25ppm/°C | Normal mode rejection | 100 dB |
| Input impedance | 20M Ohms | Intra-module isolation, field to logic : 3000 VDC | |

Excitation Voltage Output

| | | | |
|------------------|---------------|-----------------------|-----------|
| Output channels | 1 | Output range | 0 to +10V |
| Max output load | 40 mA | Accuracy | 5.24Hz |
| Drift | +/-50 ppm/ °C | Output impedance | 12 Ohms |
| Span drift | 25ppm/°C | Normal mode rejection | 100 dB |
| Voltage feedback | Yes | Isolation | 3000 VDC |

Digital Input

| | | | |
|----------------|---------------|---------------------|--------|
| Input channels | 1 | Max input frequency | 50Hz |
| Logic level 0 | + 1V max | Min. pulse width | 1 ms |
| Logic level 1 | + 3.5V to 30V | Resolution | 16-bit |

Digital Output

| | | | |
|-----------------|----------------------|-------------------|-----------------------------|
| Output channels | 4 | Output type | Sink, Open Collector to 30V |
| Output load | 30mA max per channel | Power dissipation | 300 mw |

LED Display

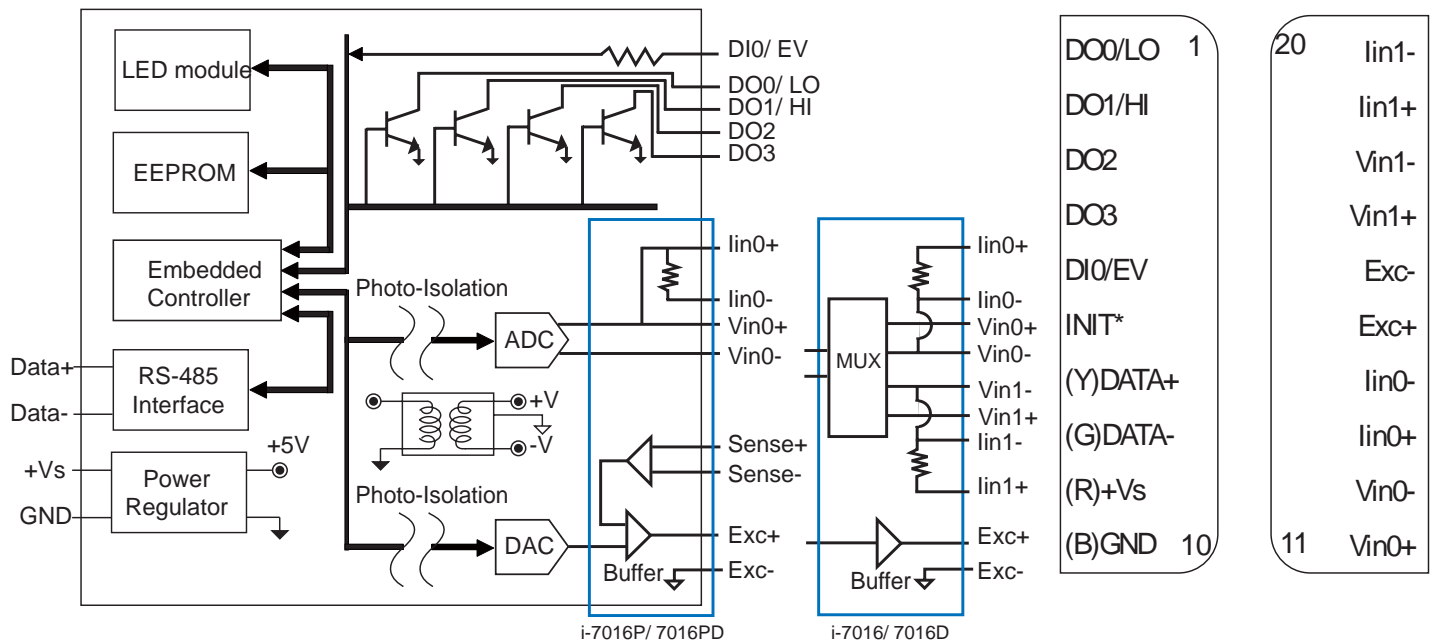
1 LED as Power/ Communication Indicator
4 1/2 digits (for i-7016D/ 16PD)

Power

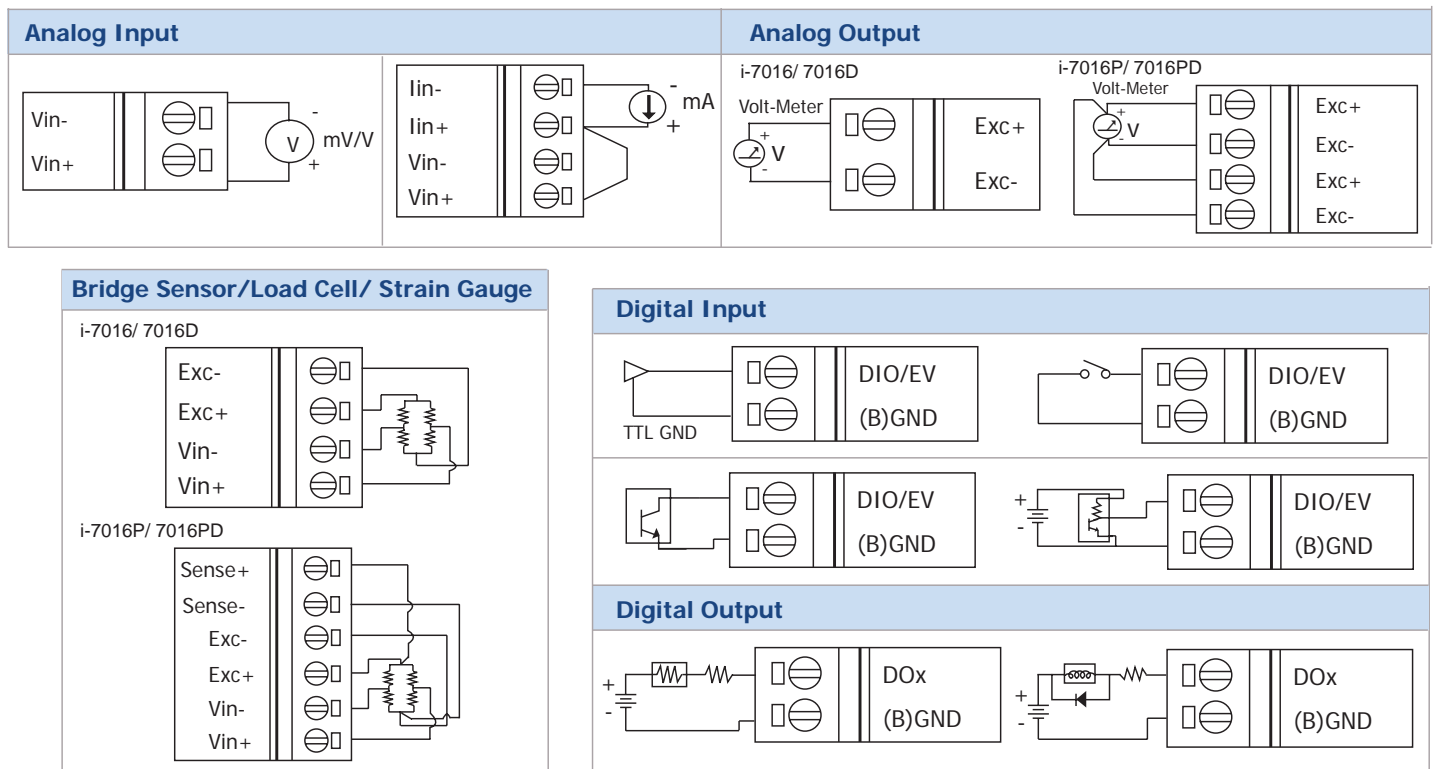
Power consumption
2.4 W (i-7016/16P)
3.0 W (i-7016D/16PD)

Internal I/O Structure

Pin Assignment



Wire Connection



Ordering Information

| | |
|-------------|---|
| i-7016 CR | 2-channel Strain Gauge Input Module (RoHS) |
| i-7016D CR | 2-channel Strain Gauge Input Module with LED Display (RoHS) |
| i-7016P CR | One-channel Strain Gauge Input Module (6 wires) (RoHS) |
| i-7016PD CR | One-channel Strain Gauge Input Module with LED Display (6 wires) (RoHS) |

i-7000 AO Modules



i-7021
i-7021P

Analog Output

i-7021/ 21P: One-channel 12/ 16-bit Analog Output Module



Description

- Slew rate of AO channels are programmable
- i-7012P is the High Precision Version



Specifications

- For i-7021/ 21P
- Only for i-7021P

| ■ Analog Output | | | |
|---|--|---------------------------|---|
| Output channels | 1 | Resolution | 12-bit/ 16-bit |
| Output type | 0~20mA , 4~20mA and 0~10V | Programmable output slope | 0.125 to 2048/ 1024 mA/ second 0.0625 to 1024/ 512 V/ second |
| Zero drift | Current output : +/-0.2uA/°C Voltage output : +/-30, +/-10uV/°C | Current load resistance | Internal Power : 500 ohms External 24V : 1050 ohms |
| Span drift | +/-25, +/-5 ppm/ °C | Photo-isolation | 3750 Vrms |
| Accuracy | +/- 0.1%, +/-0.02% of FSR | Readback Accuracy | +/-1% of FSR |
| Intra-module isolation, Field to Logic : 3000 VDC | | | |
| ■ LED Display | | ■ Power Consumption | |
| 1 LED as Power/ Communication Indicator | | 1.8W | |

Ordering Information

| | |
|------------|--|
| i-7021 CR | One-channel 12-bit Analog Output Module (RoHS) |
| i-7021P CR | One-channel 16-bit Analog Output Module (RoHS) |

i-7000 AO Modules



i-7022

Analog Output

2-channel 12-bit Analog Output Module with Channel to Channel Isolation



Description

- Slew rate of AO channels are programmable



Specifications

Analog Output

| | | | |
|-----------------|--|---------------------------|---|
| Output channels | 2, Channel to channel isolation | Resolution | 12-bit |
| Output type | 0~20mA , 4~20mA and 0~10V | Programmable output slope | 0.125 to 1024 mA/ second 0.0625 to 512 V/ second |
| Zero drift | Current output : +/-0.2uA/°C Voltage output : +/-30V/°C | Current load resistance | Internal Power : 500 ohms External 24V : 1050 ohms |
| Span drift | +/-25 ppm/ °C | Photo-isolation | 3750 Vrms |
| Accuracy | +/- 0.1% of FSR | Readback Accuracy | +/-1% of FSR |

Intra-module isolation, Field to Logic : 3000 VDC

LED Display

1 LED as Power/ Communication Indicator

Power Consumption

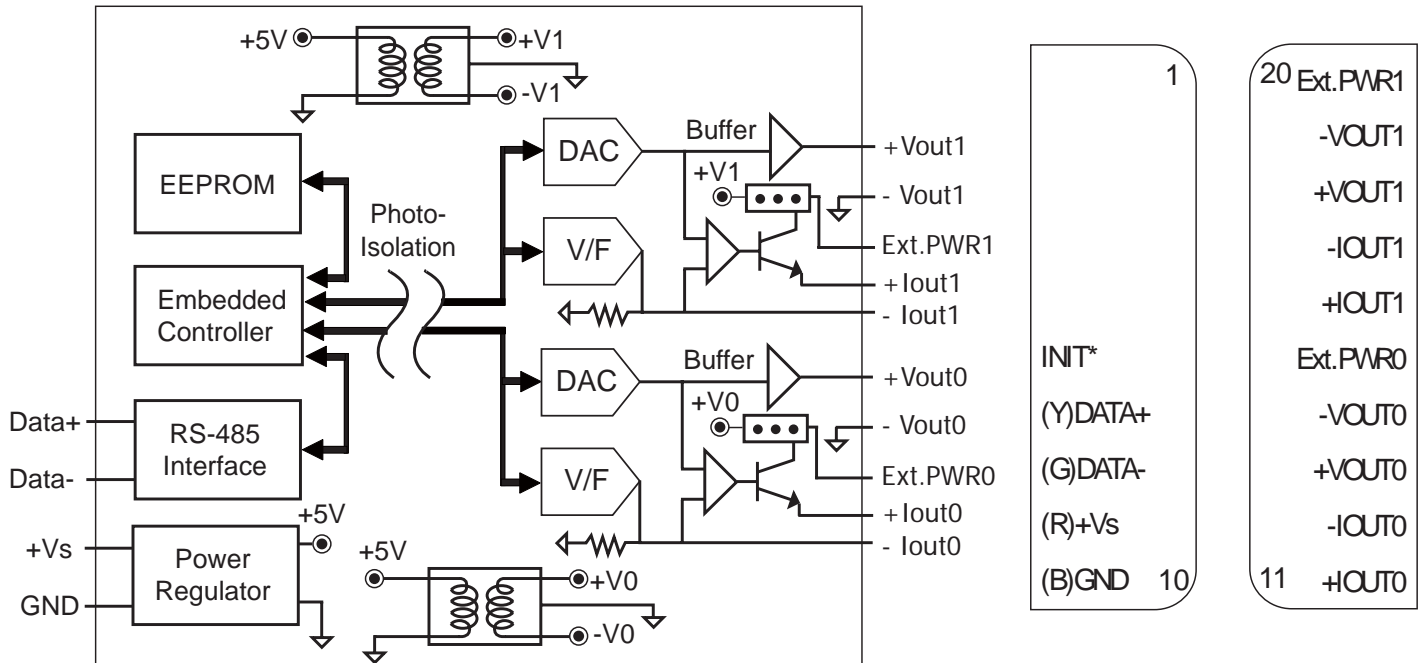
3.0W

Ordering Information

| | |
|-----------|---|
| i-7022 CR | 2-channel 12-bit Analog Output Module (channel to channel isolation) (RoHS) |
|-----------|---|

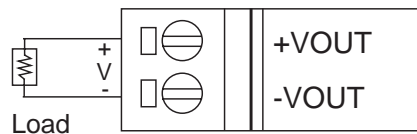
Internal I/O Structure

Pin Assignment

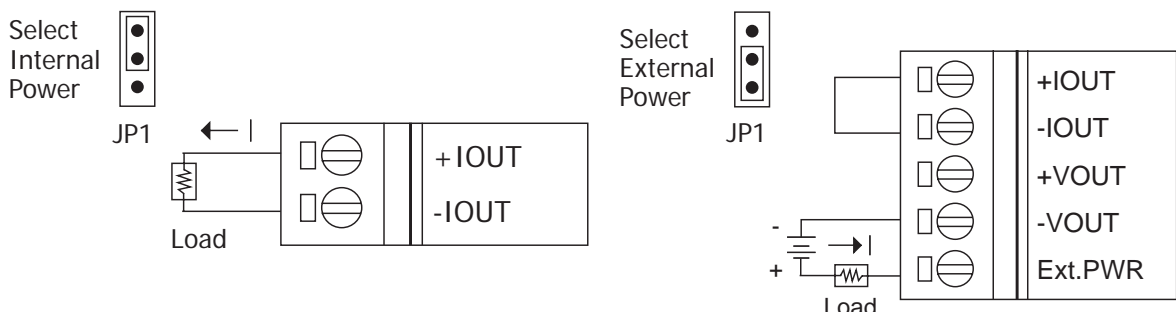


Wire Connection

Voltage Output Wiring



Current Output Wiring



Note: To access the jumpers, the cover must be opened

i-7000 AO Modules

Analog Output

4-channel 14-bit AnalogOutput Module



i-7024

Description

- Slew rate of AO channels are programmable



Specifications

Analog Output

| | | | |
|-----------------|--|---------------------------|--|
| Output channels | 4 | Resolution | 14-bit |
| Output type | 0~20mA, 4~20mA, 0~5V, +/-5V, 0~10V, +/-10V | Programmable output slope | 0.125 to 2048 mA/ second 0.0625 to 1024 V/ second |
| Zero drift | Current output : +/-0.2uA/°C Voltage output : +/-30V/°C | Current load resistance | External +24V power : 1050Ohms |
| Span drift | +/-20 ppm/ °C | Photo-isolation | 3750 Vrms |
| Accuracy | +/- 0.1% of FSR | Readback Accuracy | +/-1% of FSR |

Intra-module isolation, Field to Logic : 3000 VDC

LED Display

1 LED as Power/ Communication Indicator

Power Consumption

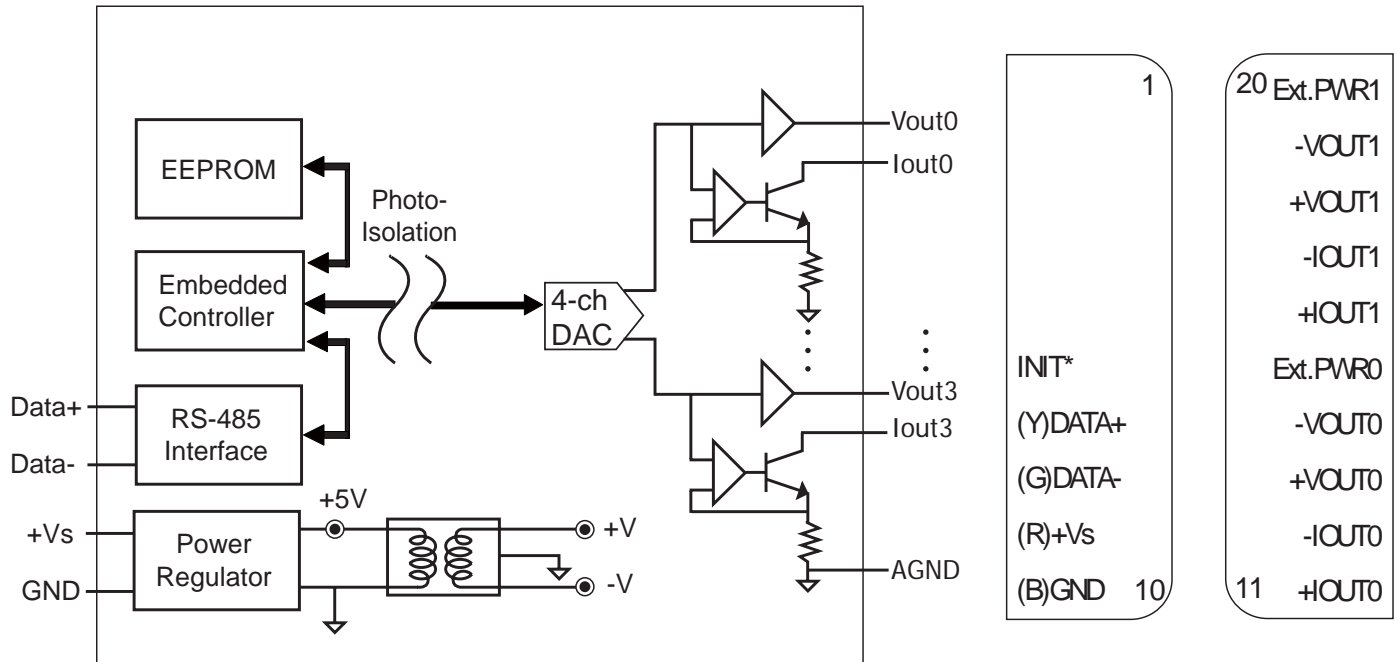
2.3W

Ordering Information

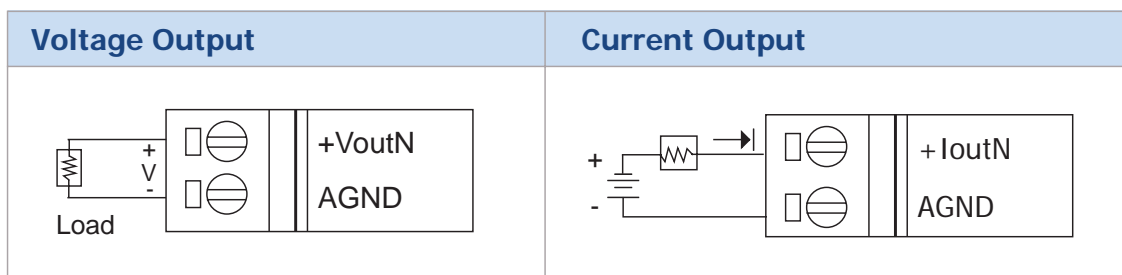
| | |
|-----------|--|
| i-7024 CR | 4-channel 14-bit Analog Output Module (RoHS) |
|-----------|--|

Internal I/O Structure

Pin Assignment



Wire Connection



i-7000 DI Modules



i-7041
i-7041D

DC Digital Input

14-channel **Isolated** Digital Input Module



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- “D” means with LED Display.



Specifications Pin Assignment

| Digital Input | |
|--|--|
| Input channels | 14 |
| Input type | Sink or Source, Isolated channel with common power or ground |
| On voltage level | 3K Ohms, 0.5W |
| Off voltage level | +1V Max |
| Counters | Channels: 14 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input impedance | 3K Ohms, 0.5W |
| Isolation voltage | 3750 Vrms |
| Power | |
| Power consumption | 0.2W (i-7041)/ 0.9W (i-7041D) |
| LED Display | |
| 1 LED as Power/ Communication Indicator 14 LEDs as Digital Input indicators (for i-7041D) | |

| | | | |
|-----------|---|----|------|
| IN 10 | 1 | 20 | IN 9 |
| IN 11 | | | IN 8 |
| IN 12 | | | IN 7 |
| IN 13 | | | IN 6 |
| IN.COM | | | IN 5 |
| INIT* | | | IN 4 |
| (Y)DATA+ | | | IN 3 |
| (G)DATA- | | | IN 2 |
| (R)+Vs | | | IN 1 |
| (B)GND 10 | | 11 | IN 0 |

Ordering Information

| | |
|------------|--|
| i-7041 CR | 14-channel Isolated Digital Input Module (RoHS) |
| i-7041D CR | 14-channel Isolated Digital Input Module with LED Display (RoHS) |

i-7000 DI Modules



i-7051
i-7051D

DC Digital Input

16-channel **Isolated** Digital Input Module



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- “D” means with LED Display
- i-7051 have blue & gray colors



Introduction

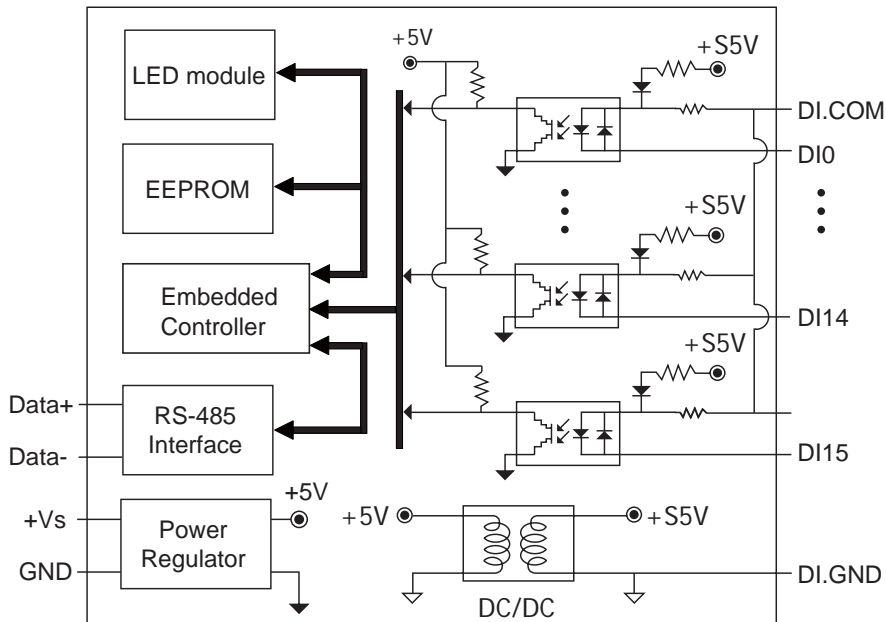
i-7051/D is intelligently designed to provide signal conditioning system monitoring and safe value settings. i-7051/D is a cost-effective solution for a wide range of valuable industrial control signals and systems. The DCON utility can help users to configure and test i-7051(16-channel Isolated Digital Input) modules. Plenty of library functions and demo programs are provided to let users develop programs easily under Windows, Linux and DOS operating systems. Users may mount the modules on a DIN rail, panel or wall. Modules have a screw-terminal block to connect to the signals.

Specifications

| Digital Input | |
|---|---|
| Input channels | 16 |
| Input type | Dry Contact (Source), Wet Contact (Sink, Source) |
| Dry contact | Off Voltage Level : open On Voltage Level : close to GND |
| Effective distance | 500M max. for Dry Contact |
| Wet contact | Off Voltage Level : +4V max. On Voltage Level : +10V to +50V |
| Input impedance | 10K Ohms, 0.5W |
| Over-voltage protect | 70 VDC |
| Counters | channels : 16 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |
| Power | |
| Power consumption | 0.3W (i-7051) / 1.1W (i-7051D) |
| LED Display | |
| 16 LEDs as Digital Input indicators (for i-7051D) | |

Internal I/O Structure

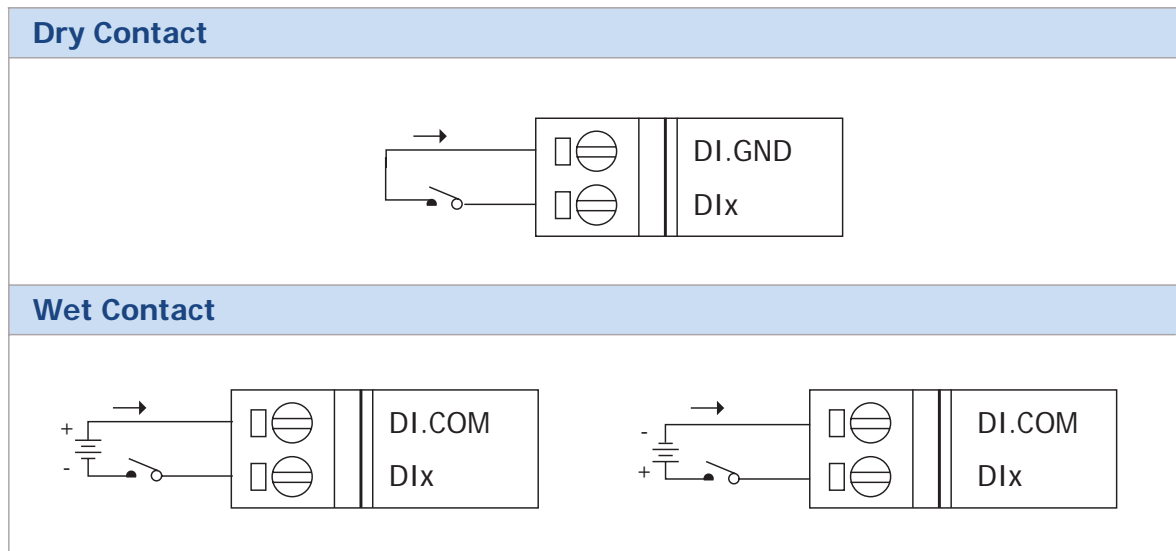
Pin Assignment



DI.GND 1
DI 11
DI 12
DI 13
DI 14
DI 15
DI.COM
(Y)DATA+
(G)DATA-
(Y)DATA+
(G)DATA-
(R)+VS
(B)GND 13

26 DI.GND
DI 10
DI 9
DI 8
DI 7
DI 6
DI.COM
DI 5
DI 4
DI 3
DI 2
DI 1
DI 0
14

Wire Connection



Ordering Information

| | |
|------------|--|
| i-7051 CR | 16-channel Isolated Digital Input Module (RoHS) |
| i-7051D CR | 16-channel Isolated Digital Input Module with LED Display (RoHS) |

i-7000 DI Modules



i-7052
i-7052D

DC Digital Input

8-channel **Isolated** Digital Input Module



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- “D” means with LED Display.



Specifications

Pin Assignment

Digital Input

| | |
|-------------------|--|
| Input channels | 8 |
| Input type | Sink, Source, 6 fully independent channels and 2 common ground channels |
| Off voltage level | +1V Max |
| On voltage level | +4V to +30V |
| Input impedance | 3K Ohms, 0.3W |
| Photo-isolation | 5000Vrms |
| Counters | channels : 8 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |

Power

| | |
|-------------------|---------------------------------|
| Power consumption | 0.2W (i-7052) / 0.6 W (i-7052D) |
|-------------------|---------------------------------|

LED Display

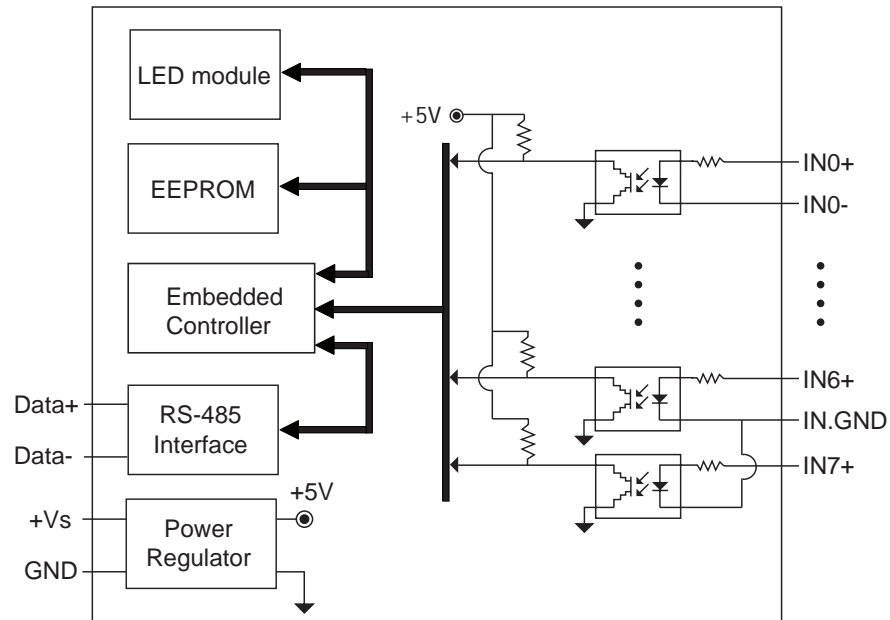
8 LEDs as Digital Input indicators (for i-7052D)

| | | | |
|-----------|---|----|------|
| IN5+ | 1 | 20 | IN4- |
| IN5- | | | IN4+ |
| IN6+ | | | IN3- |
| IN.GND | | | IN3+ |
| IN7+ | | | IN2- |
| INIT* | | | IN2+ |
| (Y)DATA+ | | | IN1- |
| (G)DATA- | | | IN1+ |
| (R)+Vs | | | IN0- |
| (B)GND 10 | | 11 | IN0+ |

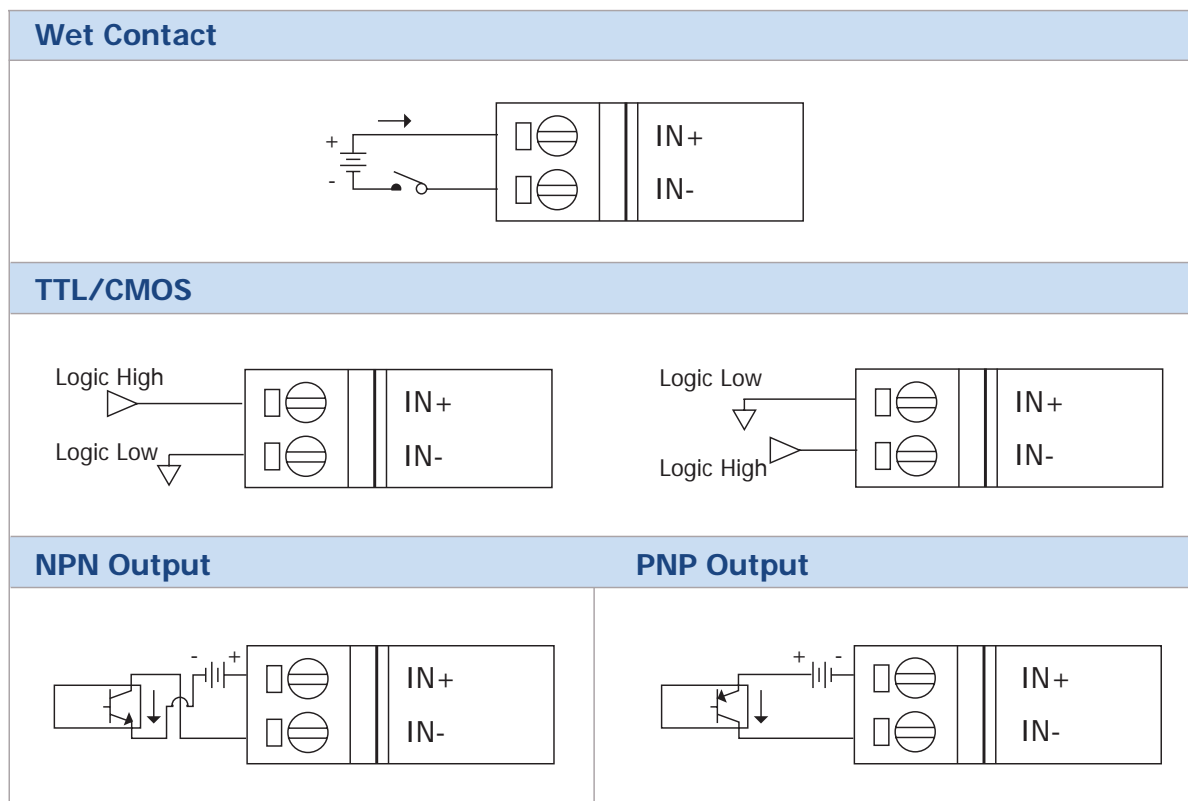
Ordering Information

| | |
|------------|---|
| i-7052 CR | 8-channel Isolated Digital Input Module (RoHS) |
| i-7052D CR | 8-channel Isolated Digital Input Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection



i-7000 DI Modules

DC Digital Input

16-channel Non-Isolated Digital Input Module



i-7053_FG/-G
i-7053D_FG/-G

Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- Blue cover: i-7053_FG, i-7053D_FG
- Gray cover: i-7053_FG-G, i-7053D_FG-G



Specifications

Pin Assignment

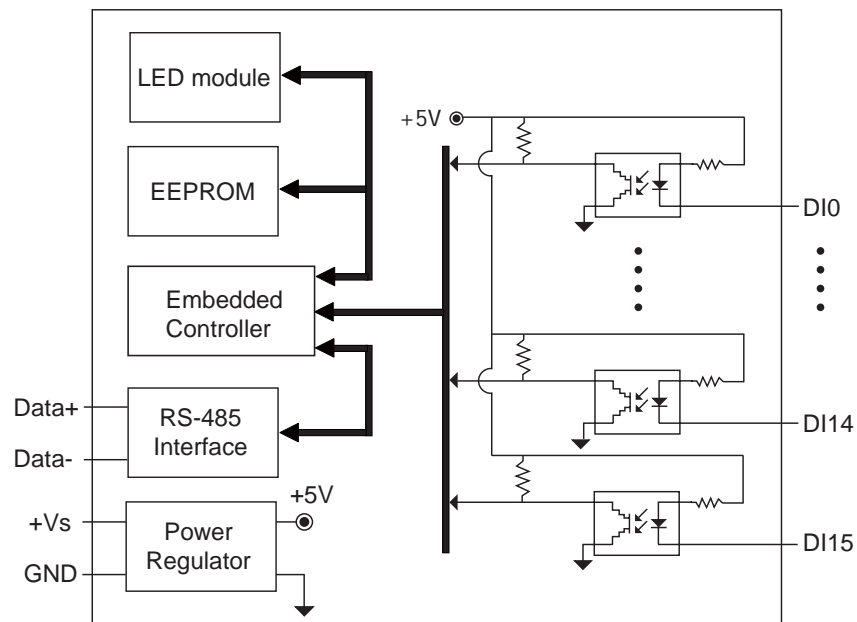
| Digital Input | |
|---|---|
| Input channels | 16 |
| Input type | Dry Contact, Source |
| Off level | Close to GND |
| On level | Open |
| Effective distance | 500m max. |
| Counters | channels : 16 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |
| Power | |
| Power consumption | 0.7W (i-7053_FG, i-7053_FG-G) 0.9W (i-7053D_FG, i-7053D_FG-G) |
| LED | |
| 1 LED as Power/ Communication indicator 16 LEDs as Digital Input indicators (For i-7053D_FG, i-7053D_FG-G) | |

| | | | |
|-----------|---|----|------|
| DI 10 | 1 | 20 | DI 9 |
| DI 11 | | | DI 8 |
| DI 12 | | | DI 7 |
| DI 13 | | | DI 6 |
| DI 14 | | | DI 5 |
| DI 15 | | | DI 4 |
| (Y)DATA+ | | | DI 3 |
| (G)DATA- | | | DI 2 |
| (R)+Vs | | | DI 1 |
| (B)GND 10 | | 11 | DI 0 |

Ordering Information

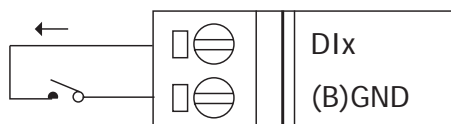
| | |
|-----------------|--|
| i-7053_FG CR | 16-cannel Non-Isolated Digital Input Module (RoHS) |
| i-7053D_FG CR | 16-cannel Non-Isolated Digital Input Module with LED Display (RoHS) |
| i-7053_FG-G CR | 16-cannel Non-Isolated Digital Input Module (Gray cover) (RoHS) |
| i-7053D_FG-G CR | 16-cannel Non-Isolated Digital Input Module with LED Display (Gray cover) (RoHS) |

Internal I/O Structure

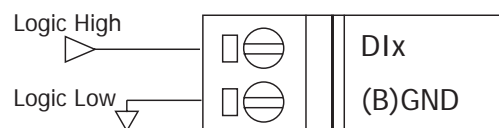


Wire Connection

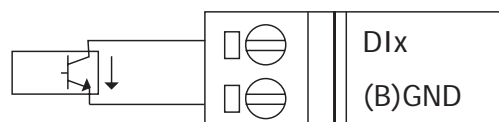
Wet Contact



TTL/CMOS



Open Collector



i-7000 DI Modules

AC Digital Input

8-channel **Isolated AC** Voltage
Digital Input Module



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- "D" means with LED Display.

i-7058
i-7058D



Introduction

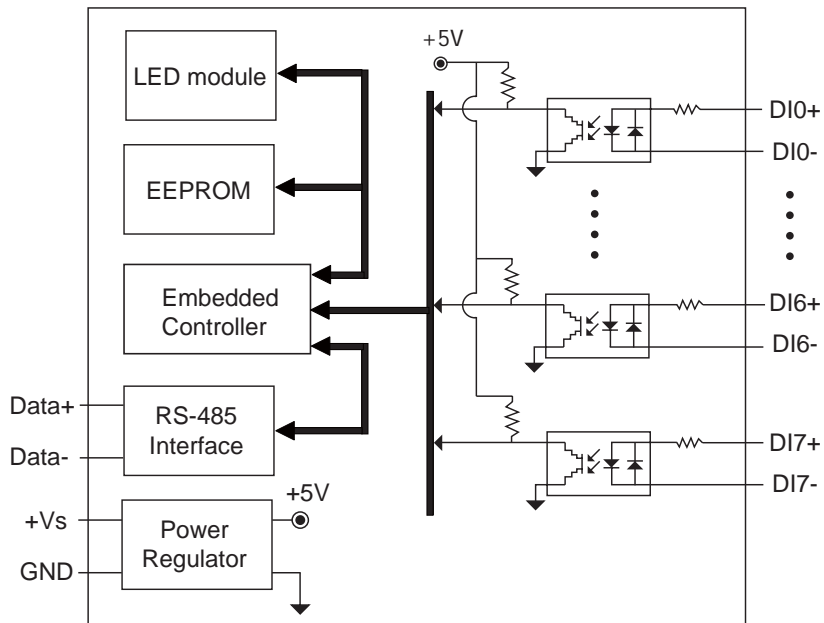
i-7058/D is a cost-effective solution for a wide range of valuable industrial control signals and systems. The DCON utility can help users to configure and test i-7058 (8 channel Isolated digital Input module). Plenty of library functions and demo programs are provided to let users develop programs easily under Windows, Linux and DOS operating systems. The communication interface is modbus protocol via RS-485. Users may mount the modules on a DIN rail, panel or wall. Modules have a screw-terminal block to connect to the signals.

Specifications

| ■ Digital Input | | | |
|---|---|-------------------|-----------------------------------|
| Input channels | 8 | Input type | AC, Differential, isolated |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms | On voltage level | 80 ~ 250VAC |
| | | Off voltage level | 20VAC max. |
| AC frequency | 50~60Hz (> 45Hz Min.) | Input impedance | 68K Ohm, 1W |
| Photo-isolation | 5000Vrms | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Digital Input indicators (for i-7058D) | | Power consumption | 0.3W (i-7058) / 0.7W (i-7058D) |

Internal I/O Structure

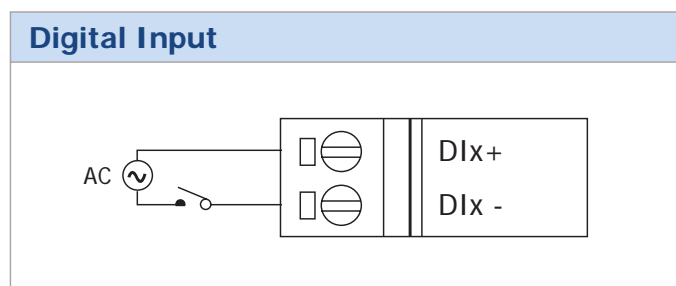
Pin Assignment



DI5+ 1
DI5-
DI6+
DI6-
DI7+
DI7-
(Y)DATA+
(G)DATA-
(R)+Vs
(B)GND 10

20 DI4 -
DI4+
DI3 -
DI3+
DI2 -
DI2+
DI1 -
DI1+
DI0 -
DI0+ 11

Wire Connection



Ordering Information

| | |
|------------|--|
| i-7058 CR | 8-channel Isolated AC Voltage Digital Input Module (RoHS) |
| i-7058D CR | 8-channel Isolated AC Voltage Digital Input Module with LED Display (RoHS) |

i-7000 DI Modules



i-7059
i-7059D

AC Digital Input

8-channel **Isolated AC** Voltage
Digital Input Module



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- “D” means with LED Display.
- i-7059 have blue cover (i-7059/ 59D) and gray cover (i-7059-G/ 59D-G)



Introduction

i-7059/D is a cost-effective solution for a wide range of valuable industrial control signals and systems. The DCON utility can help users to configure and test i-7059 (8 channel Isolated digital Input module). Plenty of library functions and demo programs are provided to let users develop programs easily under Windows, Linux and DOS operating systems. The communication interface is modbus protocol via RS-485. Users may mount the modules on a DIN rail, panel or wall. Modules have a screw-terminal block to connect to the signals.

Specifications

Digital Input

| | | | |
|------------------------|---|--------------------------|----------------------------|
| Input channels | 8 | Input type | AC, Differential, isolated |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms | On voltage level | 10 ~ 50VAC |
| AC frequency | 47~400Hz (> 45Hz min) | Off voltage level | 3 VAC max. |
| Photo-isolation | 5000Vrms | Peak voltage | 70 VAC |
| | | Input impedance | 10K Ohm, 0.5W |

LED Display

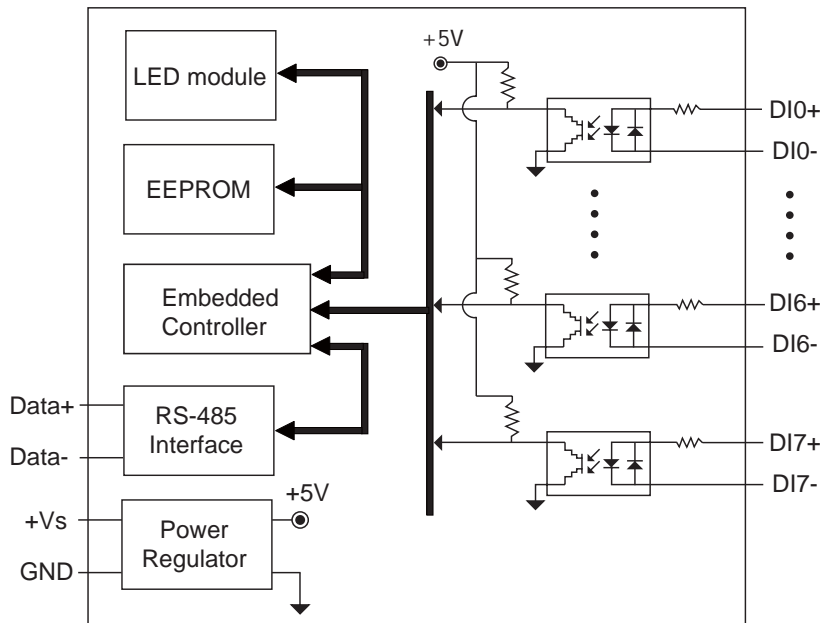
1 LED as Power/ Communication Indicator
8 LEDs as Digital Input indicators (for i-7059D)

Power

Power consumption 0.3W (max.) (i-7059) /
0.7W (max.) (i-7059D)

Internal I/O Structure

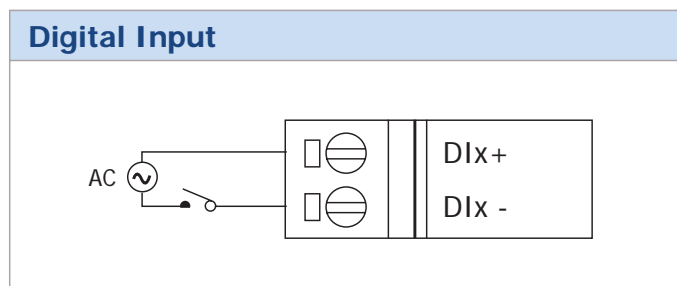
Pin Assignment



| | |
|----------|----|
| DI5+ | 1 |
| DI5- | |
| DI6+ | |
| DI6- | |
| DI7+ | |
| DI7- | |
| (Y)DATA+ | |
| (G)DATA- | |
| (R)+Vs | |
| (B)GND | 10 |

| | |
|----|-------|
| 20 | DI4 - |
| | DI4+ |
| | DI3 - |
| | DI3+ |
| | DI2 - |
| | DI2+ |
| | DI1 - |
| | DI1+ |
| | DI0 - |
| 11 | DI0+ |

Wire Connection



Ordering Information

| | |
|--------------|---|
| i-7059 CR | 8-channel Isolated AC Voltage Digital Input Module (ROHS) |
| i-7059D CR | 8-channel Isolated AC Voltage Digital Input Module with LED Display (ROHS) |
| i-7059-G CR | 8-channel Isolated AC Voltage Digital Input Module (Gray cover) (ROHS) |
| i-7059D-G CR | 8-channel Isolated AC Voltage Digital Input Module with LED Display (Gray cover) (ROHS) |

i-7000 DO Modules



i-7042
i-7042D

DC Digital Output

13-channel **Isolated** O.C. Output Module



Description

- DC Output Module
- “D” means with LED Display.



Introduction

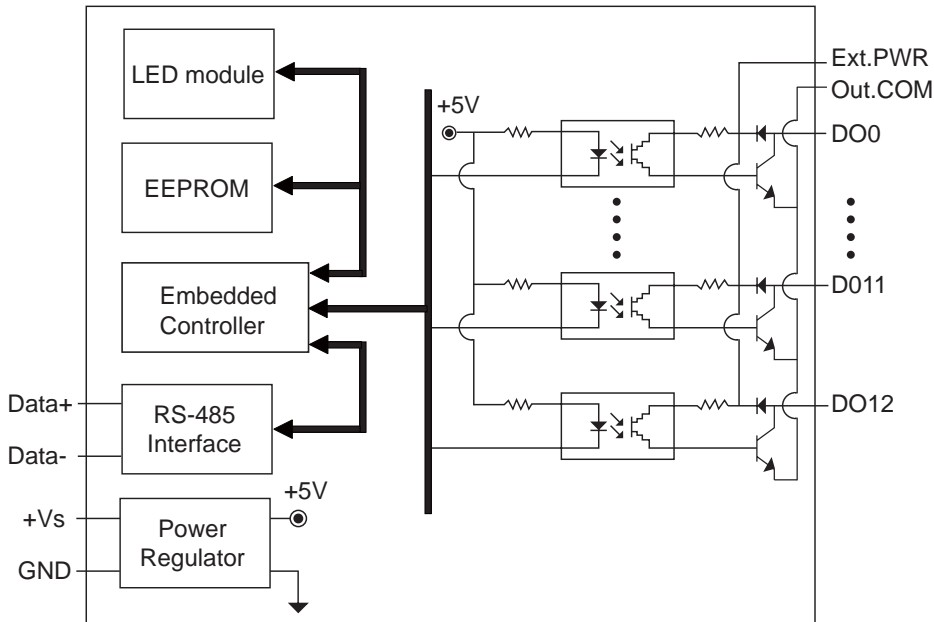
i-7042/D is a cost-effective solution for a wide range of valuable industrial control signals and systems. The DCON utility can help users to configure and test i-7042 Isolated O.C. Output modules. Plenty of library functions and demo programs are provided to let users develop programs easily under Windows, Linux and DOS operating systems. Users may mount the modules on a DIN rail, panel or wall. Modules have a screw-terminal block to connect to the signals.

Specifications

| Digital Output | | | |
|---|--|-------------------|-----------------------------------|
| Input channels | 13 | Output type | Isolation Open Collector |
| Output voltage | 30V max. | Isolation voltage | 3750V |
| Output current | 100mA per channel, Direct drive power relay module | | |
| LED Display | | Power | |
| 1 LED as Power/ Communication Indicator 13 LEDs as Digital Output indicators (for i-7042D) | | Power consumption | 0.9W (i-7042) / 1.5W (i-7042D) |

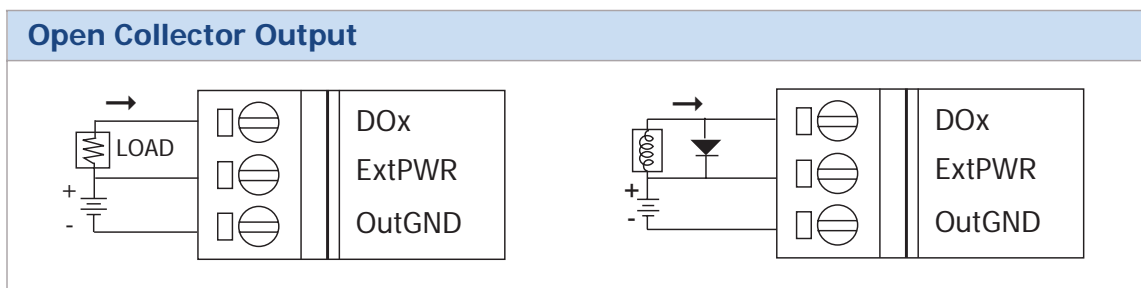
Internal I/O Structure

Pin Assignment



| | | | |
|----------|----|----|------|
| DO 10 | 1 | 20 | DO 9 |
| DO 11 | | | DO 8 |
| DO 12 | | | DO 7 |
| Ext.PWR | | | DO 6 |
| Out.COM | | | DO 5 |
| INIT* | | | DO 4 |
| (Y)DATA+ | | | DO 3 |
| (G)DATA- | | | DO 2 |
| (R)+Vs | | | DO 1 |
| (B)GND | 10 | 11 | DO 0 |

Wire Connection



Ordering Information

| | |
|------------|--|
| i-7042 CR | 13-channel Isolated O.C. Output Module (RoHS) |
| i-7042D CR | 13-channel Isolated O.C. Output Module with LED Display (RoHS) |

i-7000 DO Modules

DC Digital Output

16-channel Non-isolated O.C. Output Module



i-7043
i-7043D

Description

- DC Output Module
- “D” means with LED Display.



Specifications

Pin Assignment

Digital Output

| | |
|--------------------|--|
| Output channels | 16 |
| Output type | Open Collector |
| Output voltage | 30V max. |
| Output current | Open |
| Effective distance | 100mA per channel, Direct drive power relay module |

Power

| | |
|-------------------|--------------------------------|
| Power consumption | 0.4W (i-7043) / 1.2W (i-7043D) |
|-------------------|--------------------------------|

LED

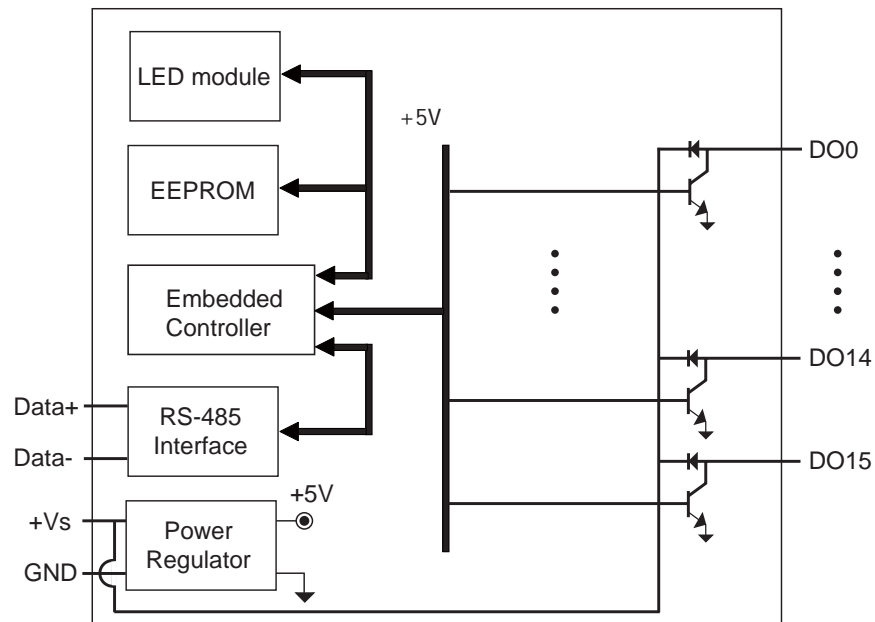
1 LED as Power/ Communication indicator
16 LEDs as Digital Output indicators (for i-7043D)

| | | | |
|------------|----|----|-----|
| DO10 | 1 | 20 | DO9 |
| DO11 | | | DO8 |
| DO12 | | | DO7 |
| DO13 | | | DO6 |
| DO14 | | | DO5 |
| INIT*/DO15 | | | DO4 |
| (Y)DATA+ | | | DO3 |
| (G)DATA- | | | DO2 |
| (R)+Vs | | | DO1 |
| (B)GND | 10 | 11 | DO0 |

Ordering Information

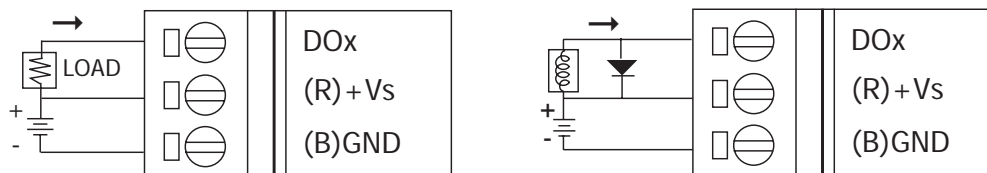
| | |
|------------|--|
| i-7043 CR | 16-channel Non-isolated O.C. Output Module (RoHS) |
| i-7043D CR | 16-channel Non-isolated O.C. Output Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection

Open Collector Output



i-7000 DO Modules

DC Digital Output

16-channel **Isolated** Digital Output Module



i-7045
i-7045D

Description

- DC Output Module
- “D” means with LED Display.



Specifications

Pin Assignment

Digital Output

| | |
|--------------------------|---|
| Output channels | 16 |
| Output type | Isolated Open Source |
| Output voltage | +10 ~ +40V |
| Output current | 650 mA per channel, Direct drive power relay module |
| Short circuit protection | Yes |

Power

| | |
|-------------------|--------------------------------|
| Power consumption | 1.0W (i-7045) / 1.8W (i-7045D) |
|-------------------|--------------------------------|

LED

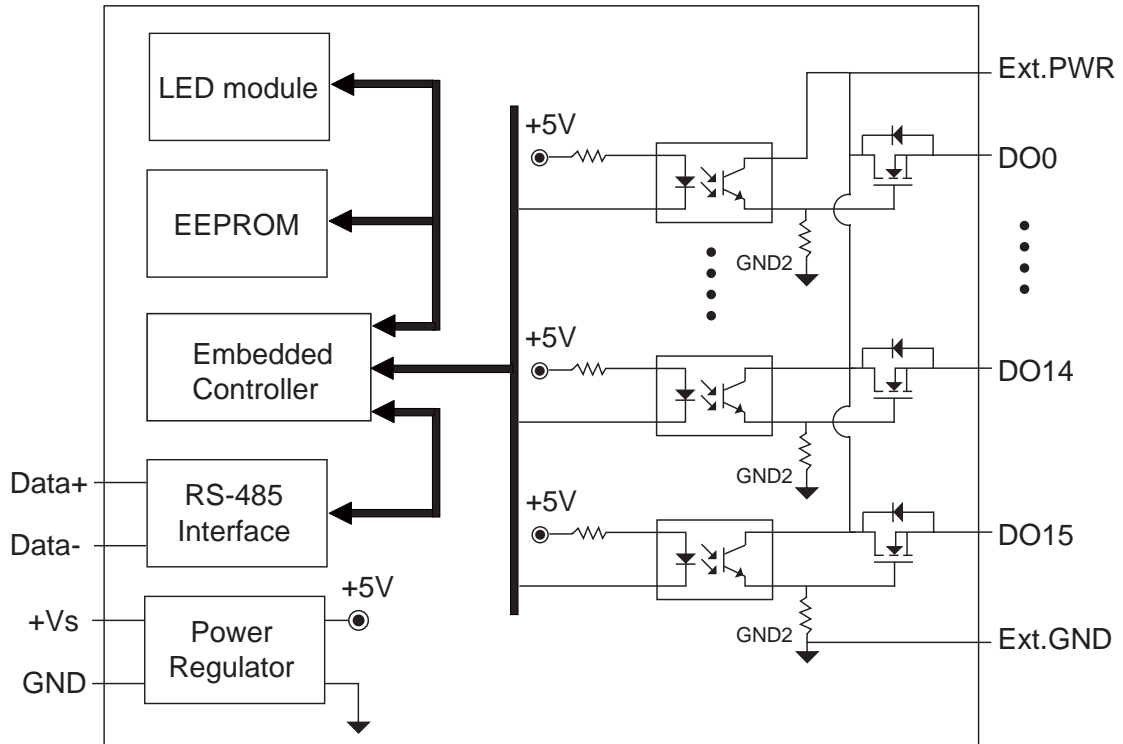
1 LED as Power/ Communication indicator
16 LEDs as Digital Output indicators (for i-7045D)

| | | | |
|----------|----|----|------|
| DO13 | 1 | 26 | DO12 |
| DO14 | | | DO11 |
| DO15 | | | DO10 |
| Ext.PWR | | | DO9 |
| Ext.GND | | | DO8 |
| (Y)DATA+ | | | DO7 |
| (G)DATA- | | | DO6 |
| (R)+Vs | | | DO5 |
| (B)GND | | | DO4 |
| (Y)DATA+ | | | DO3 |
| (G)DATA- | | | DO2 |
| (R)+VS | | | DO1 |
| (B)GND | 13 | 14 | DO0 |

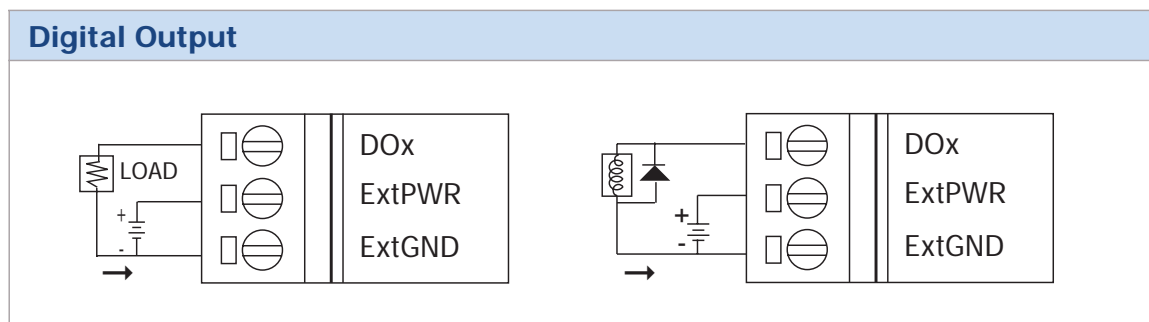
Ordering Information

| | |
|---------|--|
| i-7045 | 16-channel Isolated Digital Output Module |
| i-7045D | 16-channel Isolated Digital Output Module with LED Display |

Internal I/O Structure



Wire Connection





i-7000 DI/DO Modules



i-7044
i-7044D

DC Digital Input and Output

4-channel **Isolated** Digital Input &
8-channel **Isolated** Digital Output Module

Description



- DI channels can be used to get status and low speed (100Hz Max.) counts
- “D” means with LED Display.



Specifications

Digital Input

| | |
|-------------------|--|
| Input channels | 4 |
| Input type | Sink or Source, Isolated channel with common power or ground |
| On voltage level | +4V to +30V |
| Off voltage level | +1V Max |

Counters

Channels: 4
Max. Counters : 16-bit (65535)
Max. Input Frequency: 100Hz
Min. Pulse Width: 5ms

Isolation voltage

3750Vrms

Digital Output

| | |
|-------------------|--|
| Output channels | 8 |
| Output type | Open Collector, Isolated channel with common power |
| Output voltage | 30V max. |
| Output current | 375mA per channel |
| Isolation voltage | 3750Vrms |

LED Display

1 LED as Power/ Communication Indicator
14 LEDs as Digital Input indicators and 8 LEDs as Digital Output indicators (for i-7044D)

Power

Power consumption 0.6W (i-7044) / 1.2W (i-7044D)

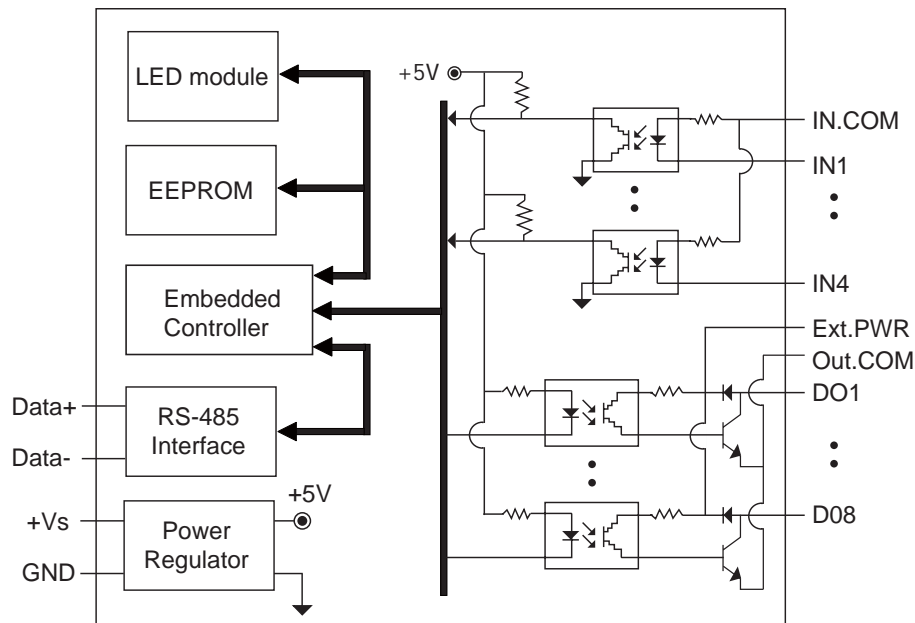
Pin Assignment

| | | | |
|----------|----|----|------|
| DO13 | 1 | 26 | DO12 |
| DO14 | | | DO11 |
| DO15 | | | DO10 |
| Ext.PWR | | | DO9 |
| Ext.GND | | | DO8 |
| (Y)DATA+ | | | DO7 |
| (G)DATA- | | | DO6 |
| (R)+Vs | | | DO5 |
| (B)GND | | | DO4 |
| (Y)DATA+ | | | DO3 |
| (G)DATA- | | | DO2 |
| (R)+VS | | | DO1 |
| (B)GND | 13 | 14 | DO0 |

Ordering Information

| | |
|------------|---|
| i-7044 CR | 4-channel Isolated Digital Input & 8-channel Isolated Digital Output Module(RoHS) |
| i-7044D CR | 4-channel Isolated Digital Input & 8-channel Isolated Digital Output Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection

| Input Type | Dry Contact Signal Input | |
|-------------|--------------------------|------------|
| | | |
| | TTL/CMOS Signal Input | |
| | | |
| Output Type | NPN Output | PNP Output |
| | | |
| | Open Collector | |
| | | |

i-7000 DI/DO Modules

DC Digital Input and Output

7-channel Digital Input &
8-channel Digital Output Module **(NPN)**



i-7050
i-7050D



Specifications

Digital Input

| | |
|-------------------|---|
| Input channels | 7 |
| Input type | Sink, non-isolated channel with common ground |
| On voltage level | +4V to +30V |
| Off voltage level | +1V Max |
| Counters | Channels: 7 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |

Digital Output

| | |
|-----------------|---------------------------|
| Output channels | 8 |
| Output type | NPN, Sink, Open collector |
| Output voltage | 30V max. |
| Output current | 30mA max. |

LED Display

1 LED as Power/ Communication Indicator
7 LEDs as Digital Input indicators and
8 LEDs as Digital Output indicators (for i-7050D)

Power

| | |
|-------------------|--------------------------------|
| Power consumption | 0.4W (i-7050) / 1.2W (i-7050D) |
|-------------------|--------------------------------|

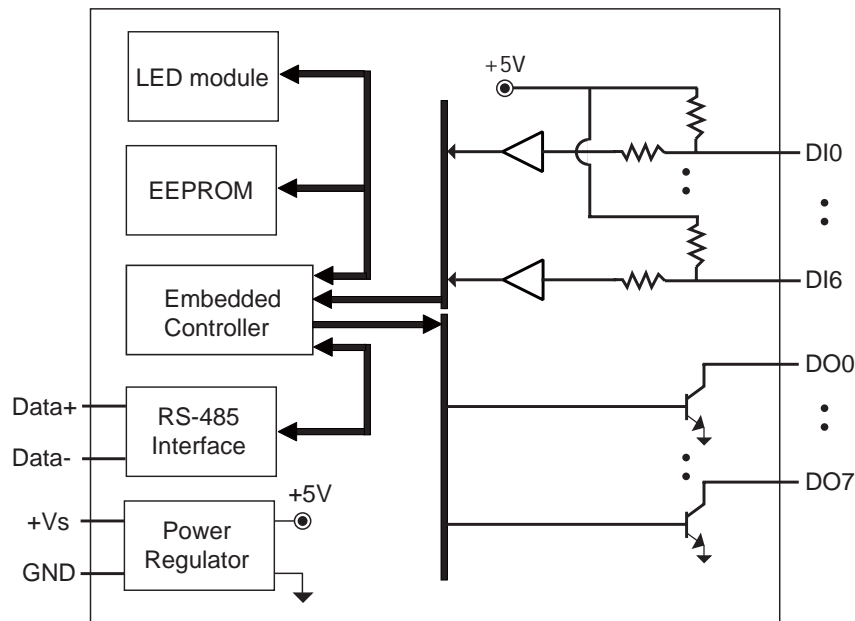
Pin Assignment

| | | | |
|----------|----|----|------|
| DO7 | 1 | 20 | DI 6 |
| DO6 | | | DI 5 |
| DO5 | | | DI 4 |
| DO4 | | | DI 3 |
| DO3 | | | DI 2 |
| INIT* | | | DI 1 |
| (Y)DATA+ | | | DI 0 |
| (G)DATA- | | | DO 0 |
| (R)+Vs | | | DO 1 |
| (B)GND | 10 | 11 | DO 2 |

Ordering Information

| | |
|------------|---|
| i-7050 CR | 7-channel Digital Input & 8-channel Digital Output Module (RoHS) |
| i-7050D CR | 7-channel Digital Input & 8-channel Digital Output Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection

| | | |
|-------------|---------------------------------|--|
| Input Type | Dry Contact Signal Input | |
| | | |
| | TTL/CMOS Signal Input | |
| | | |
| Output Type | Open Collector | |
| | | |
| Output Type | Open Collector | |
| | | |



i-7000 DI/DO Modules



i-7050A i-7050AD

DC Digital Input and Output

7-channel Digital Input &
8-channel Digital Output Module **(PNP)**



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- “D” means with LED Display.



Specifications

Digital Input

| | |
|-------------------|---|
| Input channels | 7 |
| Input type | Sink, non-isolated channel with common ground |
| On voltage level | +4V to +30V |
| Off voltage level | +1V Max |
| Counters | Channels: 7 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |

Digital Output

| | |
|-----------------|-----------------------------|
| Output channels | 8 |
| Output type | PNP, Source, Open Collector |
| Output voltage | 30V max. |
| Output current | 30mA max. |

LED Display

1 LED as Power/ Communication Indicator
7 LEDs as Digital Input indicators and
8 LEDs as Digital Output indicators (for i-7050AD)

Power

| | |
|-------------------|----------------------------------|
| Power consumption | 1.0W (i-7050A) / 1.8W (i-7050AD) |
|-------------------|----------------------------------|

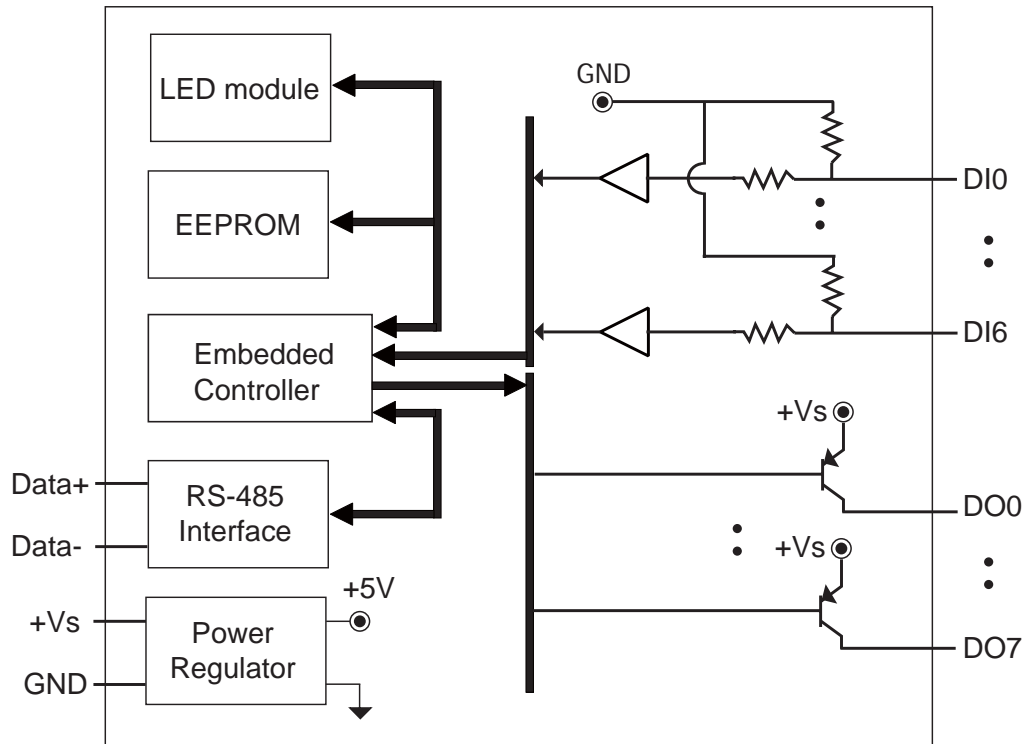
Pin Assignment

| | | | |
|----------|----|----|------|
| DO7 | 1 | 20 | DI 6 |
| DO6 | | | DI 5 |
| DO5 | | | DI 4 |
| DO4 | | | DI 3 |
| DO3 | | | DI 2 |
| INIT* | | | DI 1 |
| (Y)DATA+ | | | DI 0 |
| (G)DATA- | | | DO 0 |
| (R)+Vs | | | DO 1 |
| (B)GND | 10 | 11 | DO 2 |

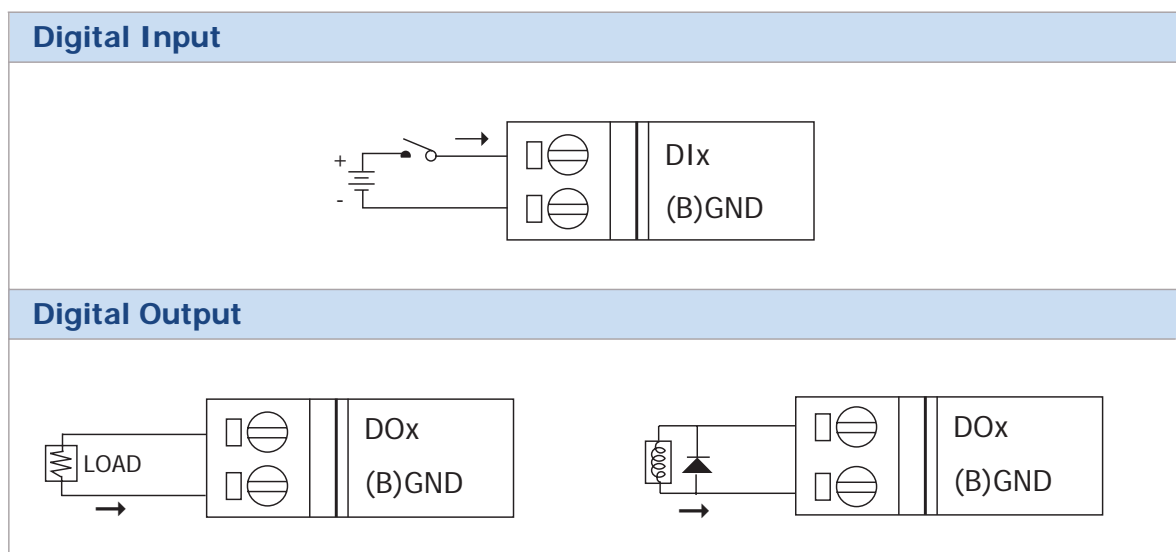
Ordering Information

| | |
|-------------|--|
| i-7050A CR | 7-channel Digital Input & 8-channel Digital Output Module (Current Source) (RoHS) |
| i-7050AD CR | 7-channel Digital Input & 8-channel Digital Output Module with LED Display (Current Source) (RoHS) |

Internal I/O Structure



Wire Connection





i-7000 DI/DO Modules



i-7055
i-7055D

DC Digital Input and Output

8-channel **Isolated** Digital Input and
8-channel **Isolated** Digital Output Module

Description



- DI channels can be used to get status and low speed (100Hz Max.) counts
- “D” means with LED Display.
- Support short circuit protection



Specifications

Digital Input

| | |
|-------------------|--|
| Input channels | 8 |
| Input type | Sink/ Source, Isolated with common |
| Dry contact level | Off voltage level : Open On voltage level : Close to GND |
| Wet contact level | Off voltage level : +4V max. On voltage level : +10V to +50V |
| Input impedance | 10K Ohms, 0.5W |
| Counters | channels : 8 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |

Digital Input

| | |
|--------------------------|--|
| Output channels | 8 |
| Output type | Source, Open Collector |
| Output voltage | 10 to 40V max. |
| Output current | 650mA per channel, Direct drive power relay module |
| Short circuit protection | Yes |

Power

| | |
|-------------------|--------------------------------|
| Power consumption | 0.8W (i-7055) / 1.6W (i-7055D) |
|-------------------|--------------------------------|

LED Display

1 LED as Power/ Communication indicator
8 LEDs as Digital Input indicators and 8 LEDs as Digital Output indicators (for i-7055D)

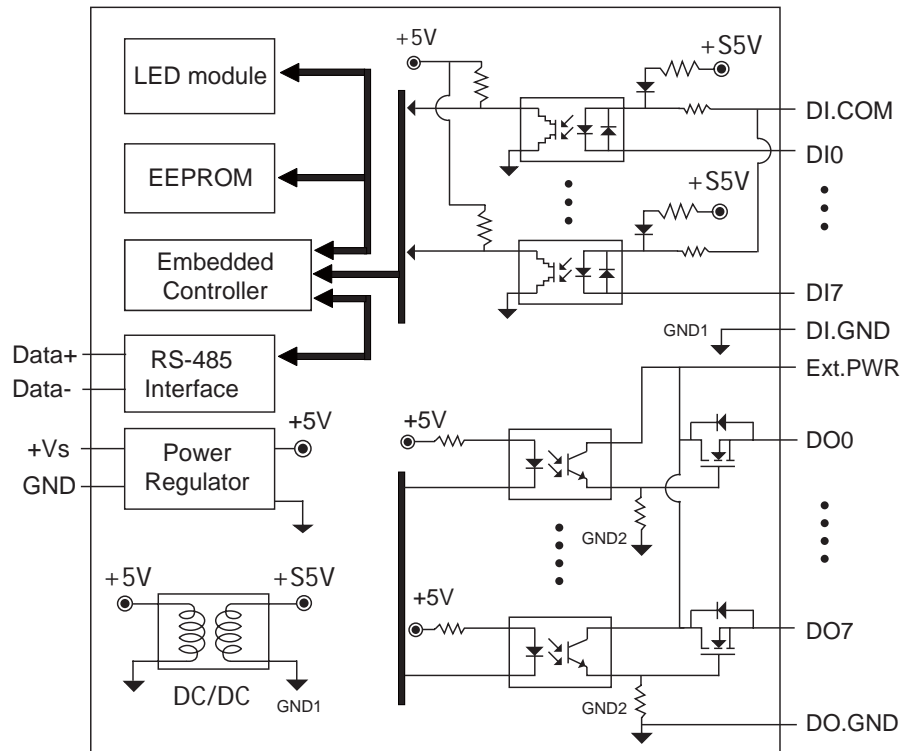
Pin Assignment

| | |
|-----------|------------|
| DI.COM 1 | 26 DI2 |
| DI3 | DI1 |
| DI4 | DI0 |
| DI5 | DO.GND |
| DI6 | DO7 |
| DI7 | DO6 |
| DI.GND | DO5 |
| (Y)DATA+ | DO4 |
| (G)DATA- | DO3 |
| (Y)DATA+ | DO2 |
| (G)DATA- | DO1 |
| (R)+Vs | DO0 |
| (B)GND 13 | 14 Ext.PWR |

Ordering Information

| | |
|------------|---|
| i-7055 CR | 8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module (RoHS) |
| i-7055D CR | 8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection

| | | |
|-------------|--------------------|--|
| Input Type | Dry Contact | |
| | | |
| Output Type | Wet Contact | |
| | | |
| Output Type | Wet Contact | |
| | | |

i-7000 Modules



i-7060 i-7060D

Power Relay Output

4-channel Relay Output and
4-channel **Isolated** Digital Input Module



Description

- Traditional Relay, limited life time is
Mechanical: 20×10^6 OPS
Electrical: 100×10^3 Full Load
- “D” means with LED Display.



Specifications

Digital Input

| | |
|-------------------|---|
| Input channels | 4 |
| Input type | Sink or Source |
| On voltage level | +4V to +30V |
| Off voltage level | +1V Max |
| Counters | Channels: 4 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input impedance | 3K Ohms, 0.5W |

Relay Output

| | |
|--------------------------|---|
| Output channels | 4 |
| Relay type | Form A x2, Form C x2 |
| Contact rating | AC: 125V @0.6A; 250V @0.3A DC: 30V @2A; 110V @0.6A |
| Operating time (typical) | 3ms |
| Release time (typical) | 2ms |
| Surge strength | 500VAC(50/60Hz) |
| Insulation resistance | 1000MW min. at 500Vdc |

LED Display

1 LED as Power/ Communication Indicator
4 LEDs as Digital Input indicators and
4 LEDs as Relay Output indicators (for i-7060D)

Power

| | |
|-------------------|---|
| Power consumption | 1.3 W (max.) (i-7060) / 1.9 W (max.) (i-7060D) |
|-------------------|---|

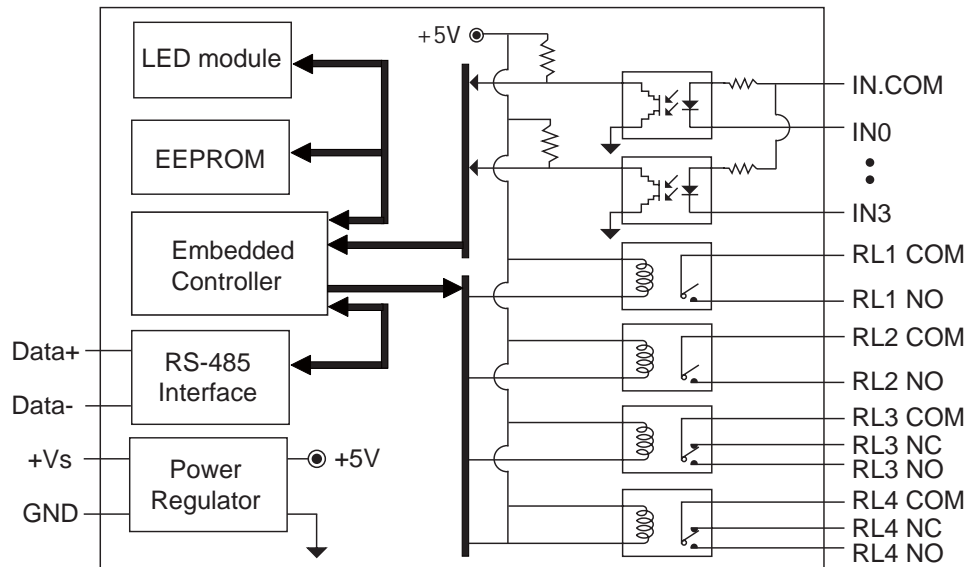
Pin Assignment

| | | | |
|----------|----|----|---------|
| IN3 | 1 | 20 | RL4 COM |
| IN2 | | | RL4 NC |
| IN1 | | | RL4 NO |
| IN0 | | | RL3 COM |
| IN.COM | | | RL3 NC |
| INIT* | | | RL3 NO |
| (Y)DATA+ | | | RL2 COM |
| (G)DATA- | | | RL2 NO |
| (R)+Vs | | | RL1 COM |
| (B)GND | 10 | 11 | RL1 NO |

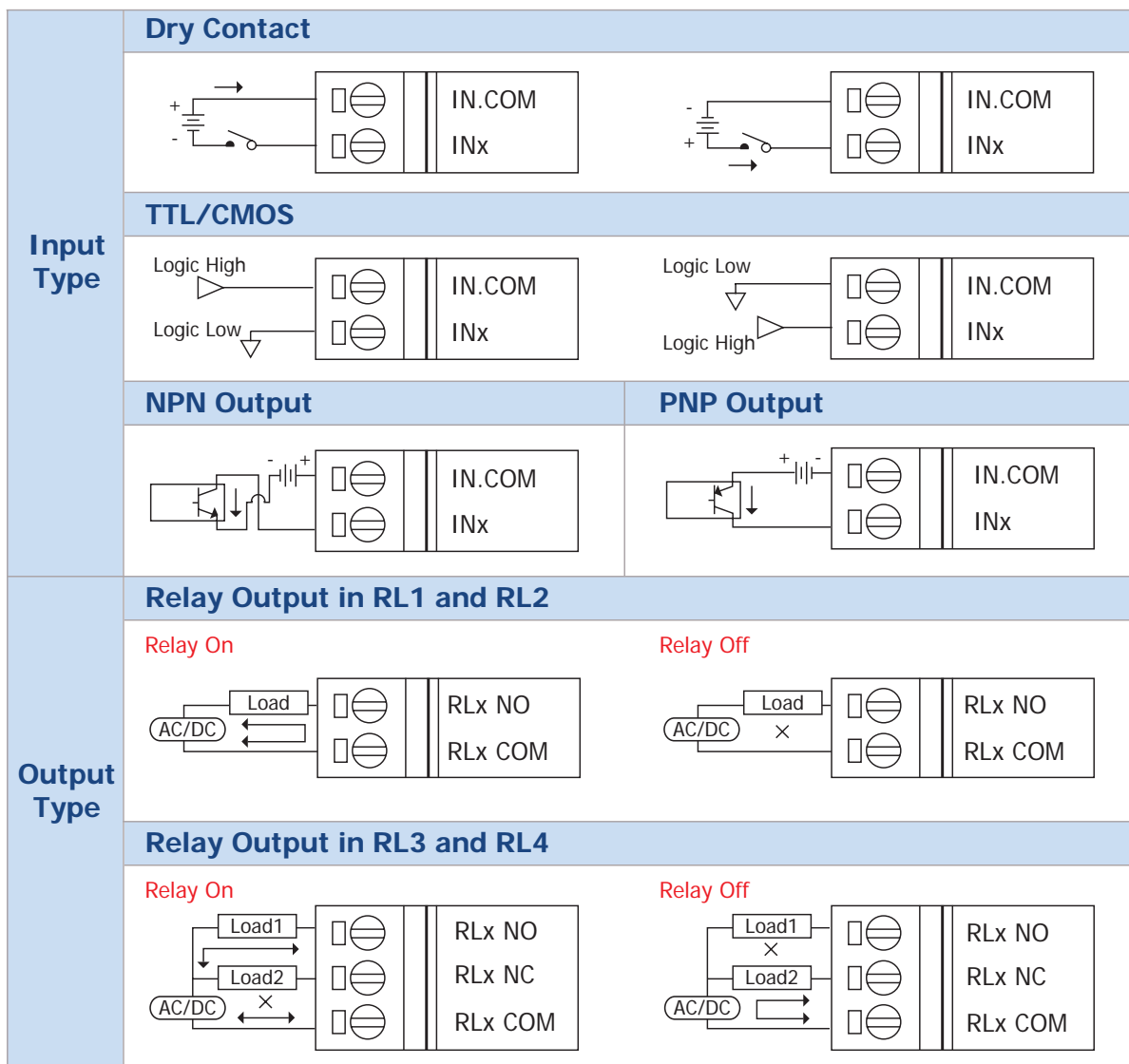
Ordering Information

| | |
|------------|---|
| i-7060 CR | 4-channel Relay Output and 4-channel Digital Input Module (RoHS) |
| i-7060D CR | 4-channel Relay Output and 4-channel Digital Input Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection





i-7000 Modules

Power Relay Output

3-channel Power Relay Output &
8-channel **Isolated** Digital Input Module



Description

- Traditional Relay, limited life time is
Mechanical: 20×10^6 OPS
Electrical: 100×10^3 Full Load
- "D" means with LED Display.



i-7063
i-7063D



Specifications

Digital Input

| | |
|-------------------|---|
| Input channels | 8 |
| Input type | Sink, Source, isolated channels with common ground or power |
| On voltage level | +4V to +30V |
| Off voltage level | +1V Max |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input impedance | 3K Ohms, 0.5W |
| Photo-isolation | 3750Vrms |

Relay Output

| | |
|--------------------------|---|
| Output channels | 3 |
| Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | AC: 250V @5A ; DC: 30V @5A |
| Operating time (typical) | 6ms |
| Release time (typical) | 3ms |
| Surge strength | 4,000VAC |
| Insulation resistance | 1000M Ohms min. at 500VDC |
| Life time | Mechanical : 20×10^6 OPS Electrical : 100×10^3 Full Load |

LED Display

1 LED as Power/ Communication Indicator
8 LEDs as Digital Input indicators and
3 LEDs as Relay Output indicators (for i-7063D)

Power

| | |
|-------------------|---|
| Power consumption | 1.0W (max.) (i-7063) / 1.5W (max.) (i-7063D) |
|-------------------|---|

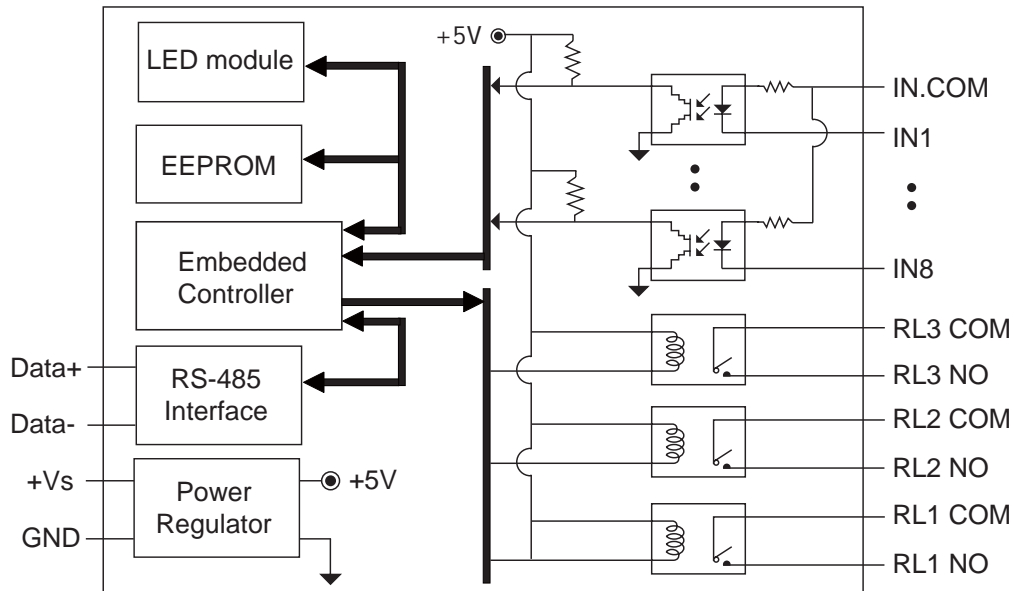
Pin Assignment

| | | | |
|-----------|---|----|--------|
| IN4 | 1 | 20 | IN5 |
| IN3 | | | IN6 |
| IN2 | | | IN7 |
| IN1 | | | IN8 |
| IN.COM | | | RL3COM |
| INIT* | | | RL3 NO |
| (Y)DATA+ | | | RL2COM |
| (G)DATA- | | | RL2 NO |
| (R)+Vs | | | RL1COM |
| (B)GND 10 | | 11 | RL1 NO |

Ordering Information

| | |
|------------|--|
| i-7063 CR | 3-channel Power Relay Output & 8-channel Isolated Digital Input Module (RoHS) |
| i-7063D CR | 3-channel Power Relay Output & 8-channel Isolated Digital Input Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection

| | | |
|-------------|------------------------|-------------------|
| Input Type | Dry Contact | |
| | | |
| | TTL/CMOS | |
| | | |
| | NPN Output | PNP Output |
| Output Type | | |
| | Relay Collector | |
| | | |



i-7000 Modules



Power Relay Output

5-channel Power Relay Output &
4-channel **Isolated** Digital Input Module



Description

- Traditional Relay, limited life time is
Mechanical: 20×10^6 OPS
Electrical: 100×10^3 Full Load
- “D” means with LED Display.

i-7065
i-7065D



Specifications

Digital Input

| | |
|-------------------|---|
| Input channels | 4 |
| Input type | Sink, Source, isolated channels with common ground or power |
| On voltage level | +4V to +30V |
| Off voltage level | +1V Max |
| Counters | Channels: 4 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input impedance | 3K Ohms, 0.5W |
| Photo-isolation | 3750Vrms |

Relay Output

| | |
|--------------------------|---|
| Output channels | 5 |
| Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | AC: 250V @5A ; DC: 30V @5A |
| Operating time (typical) | 6ms |
| Release time (typical) | 3ms |
| Surge strength | 4,000VAC |
| Insulation resistance | 1000M Ohms min. at 500VDC |
| Life time | Mechanical : 20×10^6 OPS Electrical : 100×10^3 Full Load |

LED Display

1 LED as Power/ Communication Indicator
4 LEDs as Digital Input indicators and
5 LEDs as Relay Output indicators (for i-7065D)

Power

| | |
|-------------------|---|
| Power consumption | 1.3W (max.) (i-7065) / 2.2W (max.) (i-7065D) |
|-------------------|---|

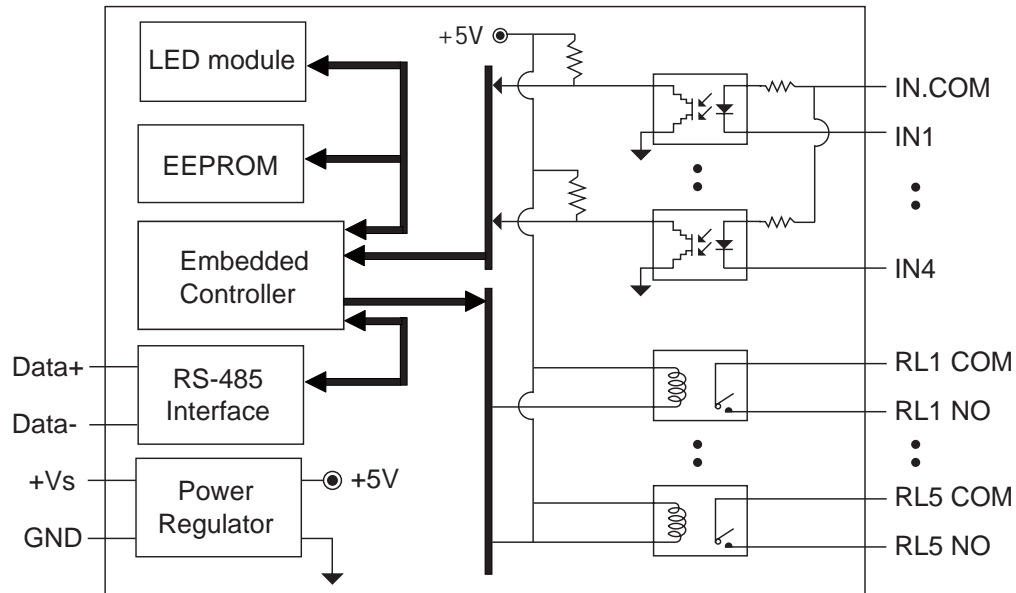
Pin Assignment

| | | |
|-----------|----|-----------|
| IN4 | 1 | 20 RL5COM |
| IN3 | | RL5 NO |
| IN2 | | RL4COM |
| IN1 | | RL4 NO |
| IN.COM | | RL3COM |
| INIT* | | RL3 NO |
| (Y)DATA+ | | RL2COM |
| (G)DATA- | | RL2 NO |
| (R)+Vs | | RL1COM |
| (B)GND 10 | 11 | RL1 NO |

Ordering Information

| | |
|------------|--|
| i-7065 CR | 5-channel Power Relay Output & 4-channel Isolated Digital Input Module (RoHS) |
| i-7065D CR | 5-channel Power Relay Output & 4-channel Isolated Digital Input Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection

| Input Type | Dry Contact | |
|-------------|-----------------|--|
| | | |
| | TTL/CMOS | |
| | | |
| Output Type | Relay Collector | |
| | | |

i-7000 Modules

Power Relay Output

7-channel Relay Output Module



i-7067 i-7067D

Description

- Traditional Relay, limited life time is
Mechanical: 20×10^6 OPS
Electrical: 100×10^3 Full Load
- "D" means with LED Display.



Specifications

Pin Assignment

Relay Output

| | |
|--------------------------|---|
| Output channels | 7 |
| Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | AC: 120V@0.5A DC: 24V @1A |
| Operating time (typical) | 5ms |
| Release time (typical) | 2ms |
| Surge strength | 1,500VAC |
| Life time | Mechanical : 20×10^6 OPS Electrical : 100×10^3 Full Load |

Power

| | |
|-------------------|---|
| Power consumption | 1.5W (max.) (i-7067) / 2.2W (max.) (i-7067D) |
|-------------------|---|

LED Display

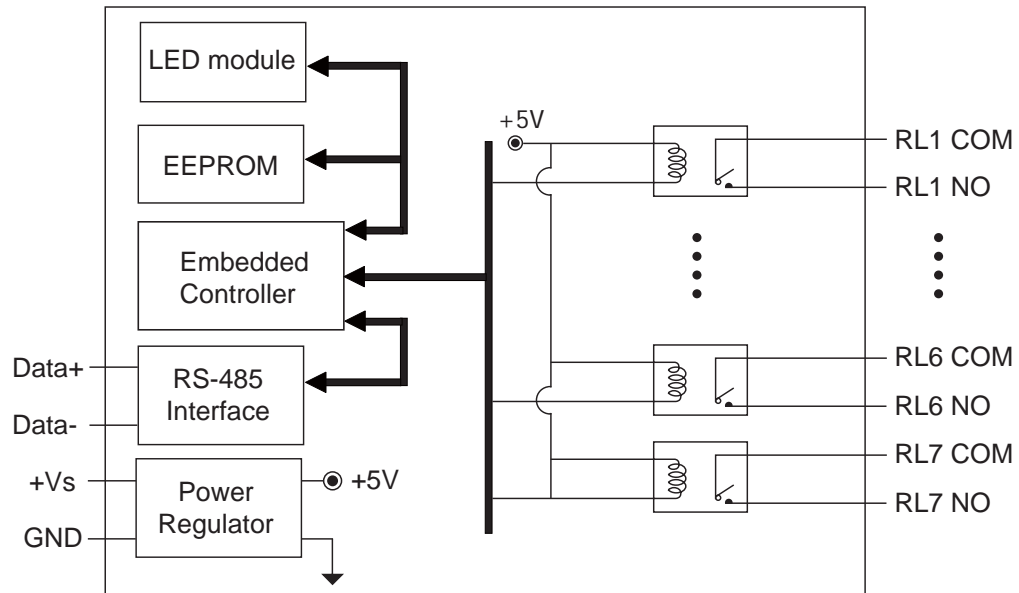
- 1 LED as Power/ Communication indicator
- 7 LEDs as Relay Output indicators (for i-7067D)

| | |
|-----------|-----------|
| RL6NO 1 | 20 RL5COM |
| RL6COM | RL5NO |
| RL7NO | RL4COM |
| RL7COM | R4LNO |
| | RL3COM |
| INIT* | RL3NO |
| (Y)DATA+ | RL2COM |
| (G)DATA- | R2LNO |
| (R)+Vs | RL1COM |
| (B)GND 10 | 11 RL1NO |

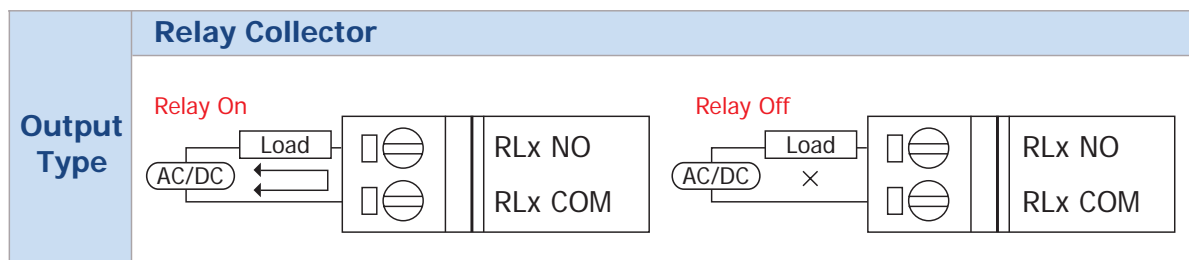
Ordering Information

| | |
|------------|---|
| i-7067 CR | 7-channel Relay Output Module (RoHS) |
| i-7067D CR | 7-channel Relay Output Module with LED Display (RoHS) |

Pin Assignment



Wire Connection



i-7000 Modules

Solid State Relay Output

8-channel **Isolated** Digital Input and
3-channel **AC** SSR Module



Description

- Long life time Relay, maintenance free.
- “D” means with LED Display.

i-7063A
i-7063AD



Specifications

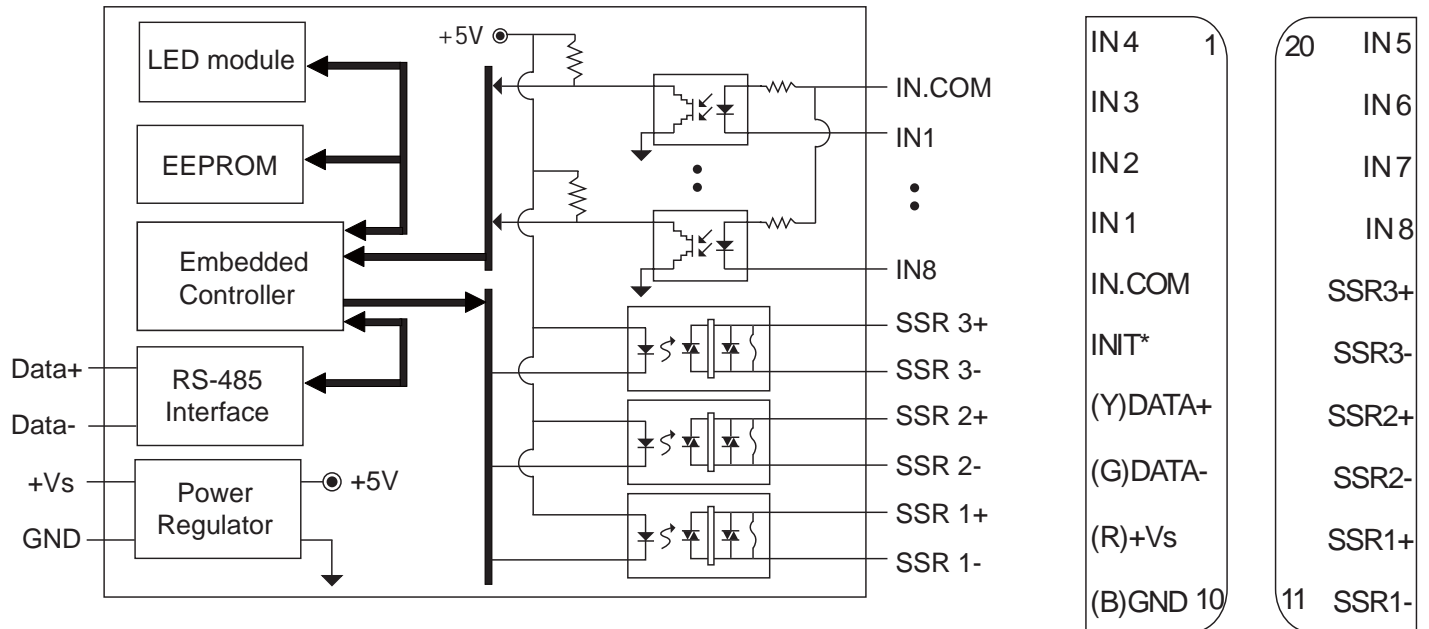
| ■ Digital Input | | | |
|---|---|----------------------------|---|
| Input channels | 8 | Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input type | Sink, Source, isolated channels with common ground or power | Input impedance | 3K Ohms, 0.5W |
| On voltage level | +4V to +30V | Photo-isolation | 3750Vrms |
| Off voltage level | +1V Max | | |
| ■ SSR AC Output | | | |
| Output channels | 3 | Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | AC:24~ 265Vrms @1.0Arms Max. Load current 1.0Arms Min. Load current 10mArms | Surge strength | 4,000VAC |
| Max. off-state leakage current | 0.75mA (at 100Vrms 60Hz) 1.50mA (at 200Vrms 60Hz) | Life time | long life, maintenance free |
| Operating time | 1ms (typical) | Max. on-state voltage drop | 1.2 Vms |
| 1 cycle surge current | 50A (60Hz) | Release time | 1ms+1/2rms (typical) |
| | | Insulation resistance | 1000M Ohms min. at 500VDC |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Digital Input indicators and 3 LEDs as Relay Output indicators (for i-7063AD) | | Power consumption | 0.7W (max.) (i-7063A) / 1.5W (max.) (i-7063AD) |

Ordering Information

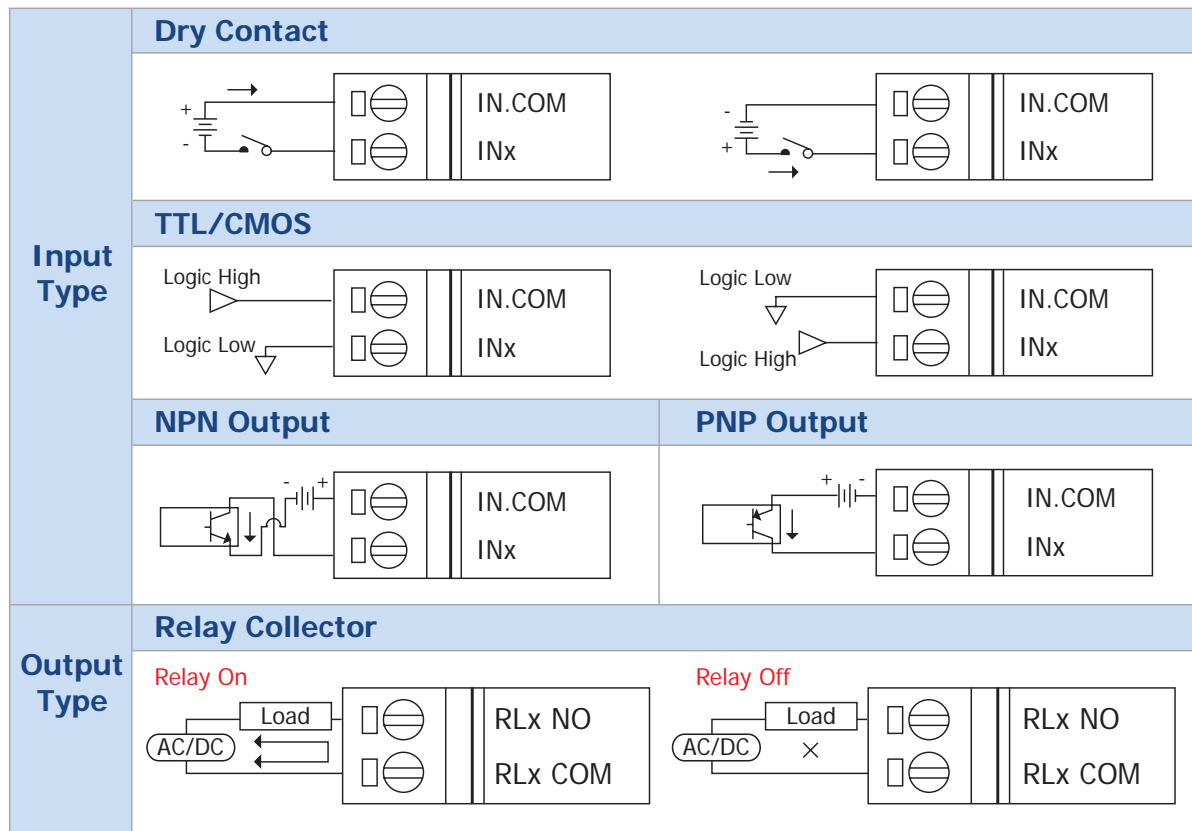
| | |
|-------------|---|
| i-7063A CR | 8-channel Isolated Digital Input and 3-channel AC SSR Relay Output Module (RoHS) |
| i-7063AD CR | 8-channel Isolated Digital Input and 3-channel AC SSR Relay Output Module with LED Display (RoHS) |

Internal I/O Structure

Pin Assignment



Wire Connection



i-7000 Modules

Solid State Relay Output

8-channel **Isolated** Digital Input and 3-channel **DC** SSR Module



Description

- Long life time Relay, maintenance free.
- “D” means with LED Display.

i-7063B
i-7063BD



Specifications

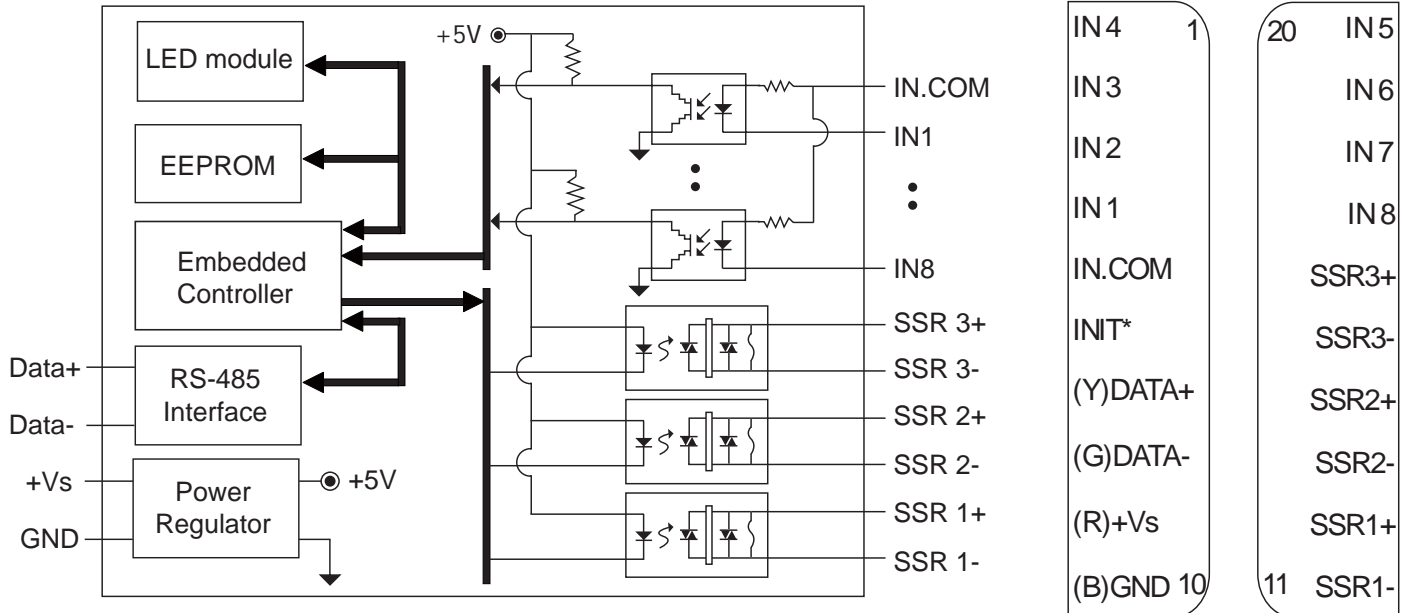
| ■ Digital Input | | | |
|---|--|----------------------------|---|
| Input channels | 8 | Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input type | Sink, Source, isolated channels with common ground or power | Input impedance | 3K Ohms, 0.5W |
| On voltage level | +4V to +30V | Photo-isolation | 3750Vrms |
| Off voltage level | +1V Max | | |
| ■ SSR DC Output | | | |
| Output channels | 3 | Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | DC:3~ 30VDC @1.0Arms Max. Load current 1.0Arms Min. Load current 10mArms | Surge strength | 4,000VAC |
| Max. off-state leakage current | 0.1mA (at 30VDC) | Life time | long life, maintenance free |
| Operating time | 1ms (typical) | Max. on-state voltage drop | 1.2 VDC |
| 1 cycle surge current | 3A (10ms) | Release time | 1ms (typical) |
| | | Insulation resistance | 1000 MOhms min. at 500VDC |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Digital Input indicators and 3 LEDs as Relay Output indicators (for i-7063BD) | | Power consumption | 0.6W (max.) (i-7063B) / 1.4W (max.) (i-7063BD) |

Ordering Information

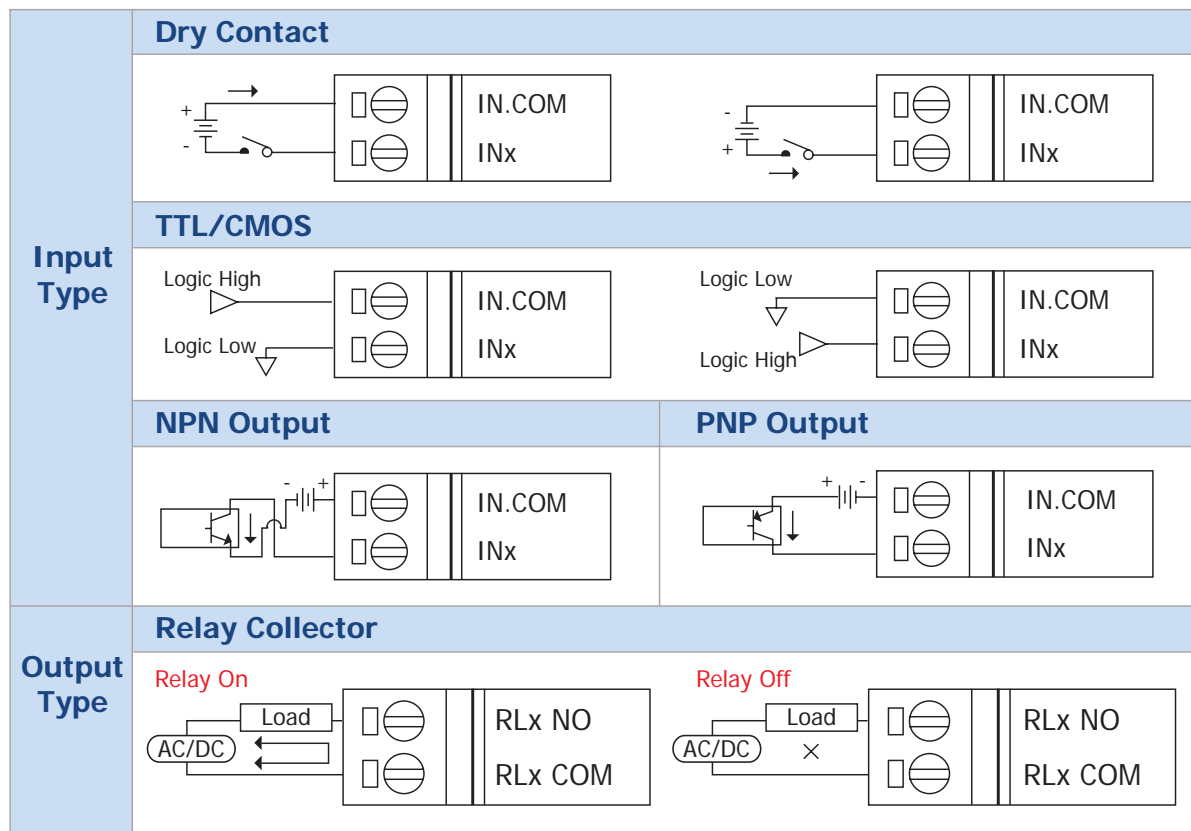
| | |
|-------------|---|
| i-7063B CR | 8-channel Isolated Digital Input and 3-channel DC SSR Relay Output Module (RoHS) |
| i-7063BD CR | 8-channel Isolated Digital Input and 3-channel DC SSR Relay Output Module with LED Display (RoHS) |

Internal I/O Structure

Pin Assignment



Wire Connection





i-7000 Modules



i-7065A i-7065AD

Solid State Relay Output

4-channel **Isolated** Digital Input and
5-channel **AC** SSR Module



Description

- Long life time Relay, maintenance free.
- Includes free EZ Data Logger software
- “D” means with LED Display.



Specifications

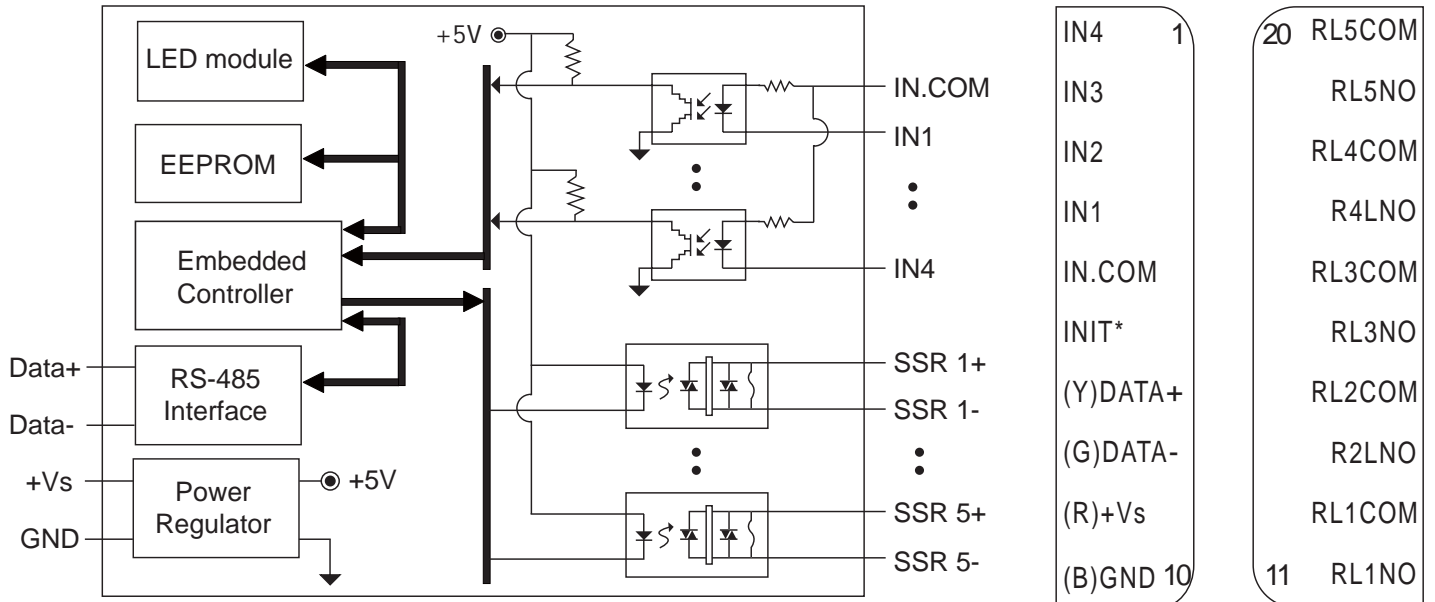
| Digital Input | | | |
|---|---|----------------------------|---|
| Input channels | 4 | Counters | Channels: 4 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input type | Sink, Source, isolated channels with common ground or power | Input impedance | 3K Ohms, 0.5W |
| On voltage level | +4V to +30V | Photo-isolation | 3750Vrms |
| Off voltage level | +1V Max | | |
| SSR AC Output | | | |
| Output channels | 5 | Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | AC:24~ 265Vrms @1.0Arms Max. Load current 1.0Arms Min. Load current 10mArms | Surge strength | 4,000VAC |
| Max. off-state leakage current | 0.75mA (at 100Vrms 60Hz) 1.50mA (at 200Vrms 60Hz) | Life time | long life, maintenance free |
| Operating time | 1ms (typical) | Max. on-state voltage drop | 1.2 Vms |
| 1 cycle surge current | 50A (60Hz) | Release time | 1ms+1/2rms (typical) |
| Insulation resistance | 1000M Ohms min. at 500VDC | | |
| LED Display | | Power | |
| 1 LED as Power/ Communication Indicator 4 LEDs as Digital Input indicators and 5 LEDs as Relay Output indicators (for i-7065AD) | | Power consumption | 0.8W (max.) (i-7065A) / 1.6W (max.) (i-7065AD) |

Ordering Information

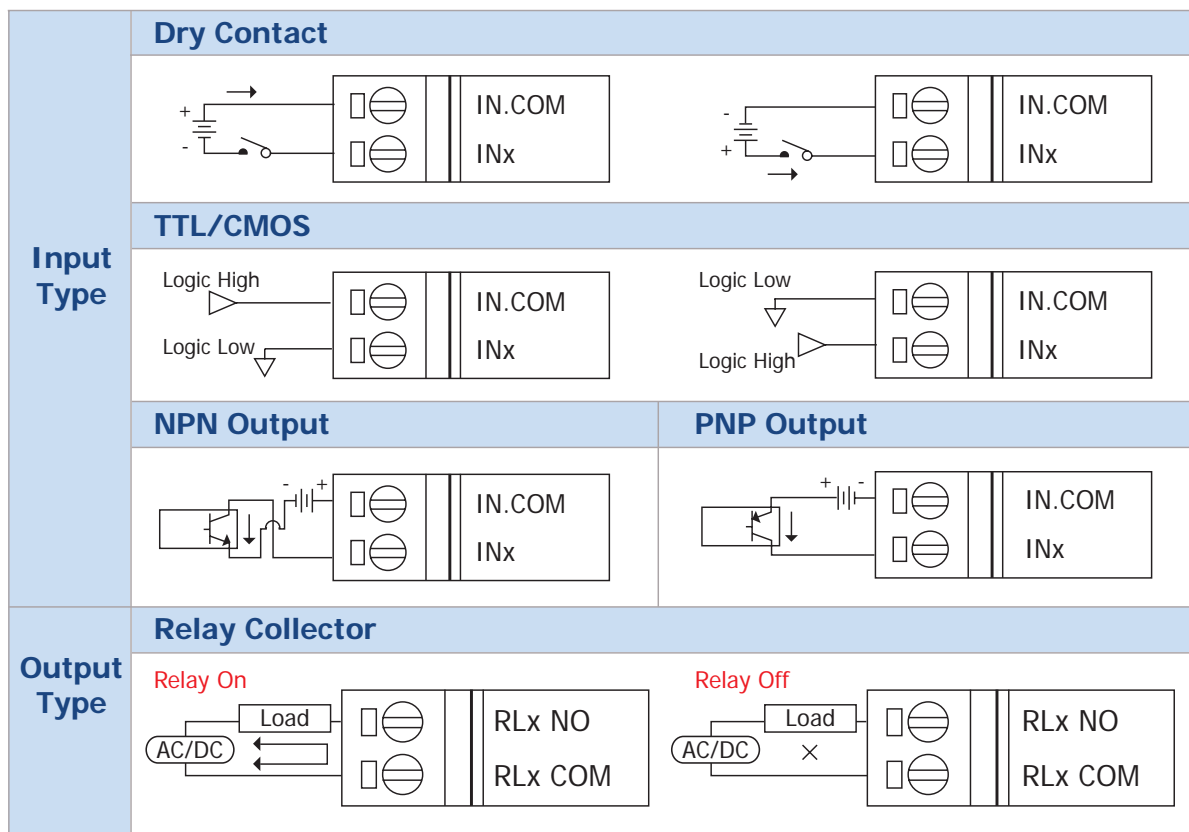
| | |
|-------------|---|
| i-7065A CR | 4-channel Isolated Digital Input and 5-channel AC SSR Relay Output Module (RoHS) |
| i-7065AD CR | 4-channel Isolated Digital Input and 5-channel AC SSR Relay Output Module with LED Display (RoHS) |

Internal I/O Structure

Pin Assignment



Wire Connection



i-7000 Modules

Solid State Relay Output

4-channel **Isolated** Digital Input and
5-channel **DC** SSR Module



Description

- Long life time Relay, maintenance free.
- "D" means with LED Display.

i-7065B
i-7065BD



Specifications

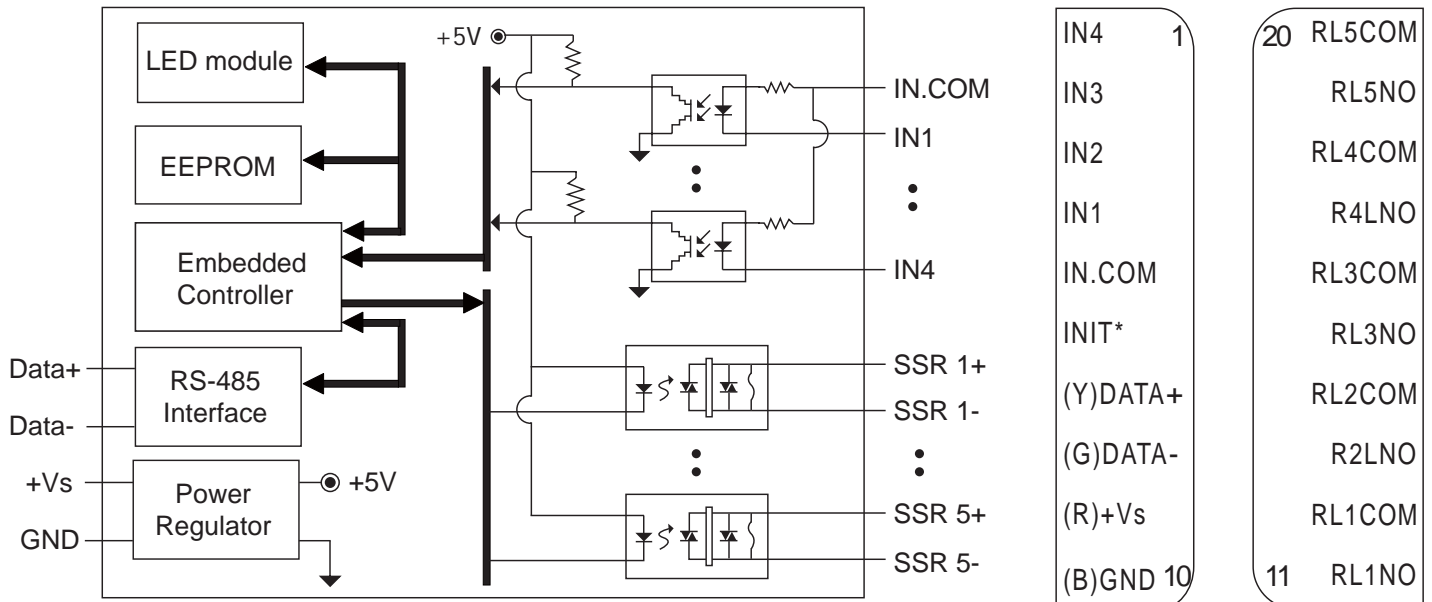
| ■ Digital Input | | | |
|---|--|----------------------------|---|
| Input channels | 4 | Counters | Channels: 4 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input type | Sink, Source, isolated channels with common ground or power | Input impedance | 3K Ohms, 0.5W |
| On voltage level | +4V to +30V | Photo-isolation | 3750Vrms |
| Off voltage level | +1V Max | | |
| ■ SSR DC Output | | | |
| Output channels | 5 | Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | DC:3~ 30VDC @1.0Arms Max. Load current 1.0Arms Min. Load current 10mArms | Surge strength | 4,000VAC |
| Max. off-state leakage current | 0.1mA (at 30VDC) | Life time | long life, maintenance free |
| Operating time | 1ms (typical) | Max. on-state voltage drop | 1.2 VDC |
| 1 cycle surge current | 3A (10ms) | Release time | 1ms (typical) |
| | | Insulation resistance | 1000M Ohms min. at 500VDC |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 4 LEDs as Digital Input indicators and 5 LEDs as Relay Output indicators (for i-7065BD) | | Power consumption | 0.7W (max.) (i-7065B) / 1.5W (max.) (i-7065BD) |

Ordering Information

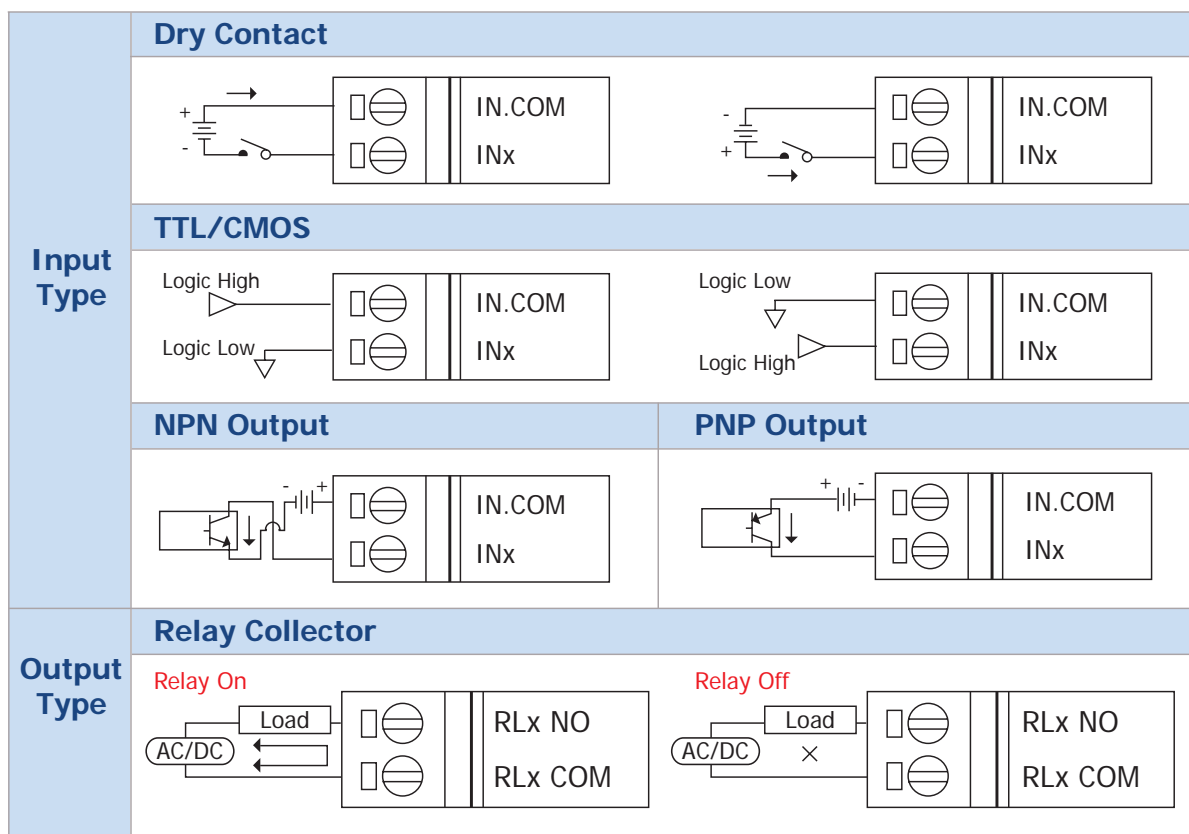
| | |
|-------------|---|
| i-7065B CR | 4-channel Isolated Digital Input and 5-channel DC SSR Relay Output Module (RoHS) |
| i-7065BD CR | 4-channel Isolated Digital Input and 5-channel DC SSR Relay Output Module with LED Display (RoHS) |

Internal I/O Structure

Pin Assignment



Wire Connection



i-7000 Modules

Photomos Relay Output

7-channel PhotoMOS Relay Output Module



Description

- Long life time Relay, maintenance free, fast On/Off
- "D" means with LED Display.

i-7066
i-7066D



Specifications

Relay Output

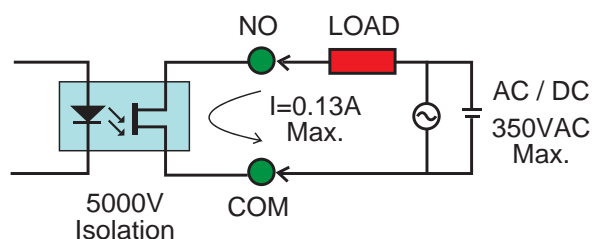
| | | | |
|----------------------------------|-------------------------|----------------------|-----------------------------|
| Output channels | 7 | Output on resistance | 230 Ohms |
| Relay type | Form A, Photo-MOS Relay | Load voltage | 350V(peak AC) |
| Continuous load current | 0.13A (peak AC) | Turn on time | 0.7ms (typical) |
| Peak load current | 0.4A | Turn off time | 0.05ms (typical) |
| Output power dissipation | 0.5W | Photo-isolation | 5,000VAC |
| Output off state leakage current | 1uA | Life time | long life, maintenance free |

LED Display

1 LED as Power/ Communication Indicator
7 LEDs as PhotoMOS Relay Output indicators (for i-7066D)

Power

Power consumption 0.5W (max.) (i-7066) / 0.8W (max.) (i-7066D)



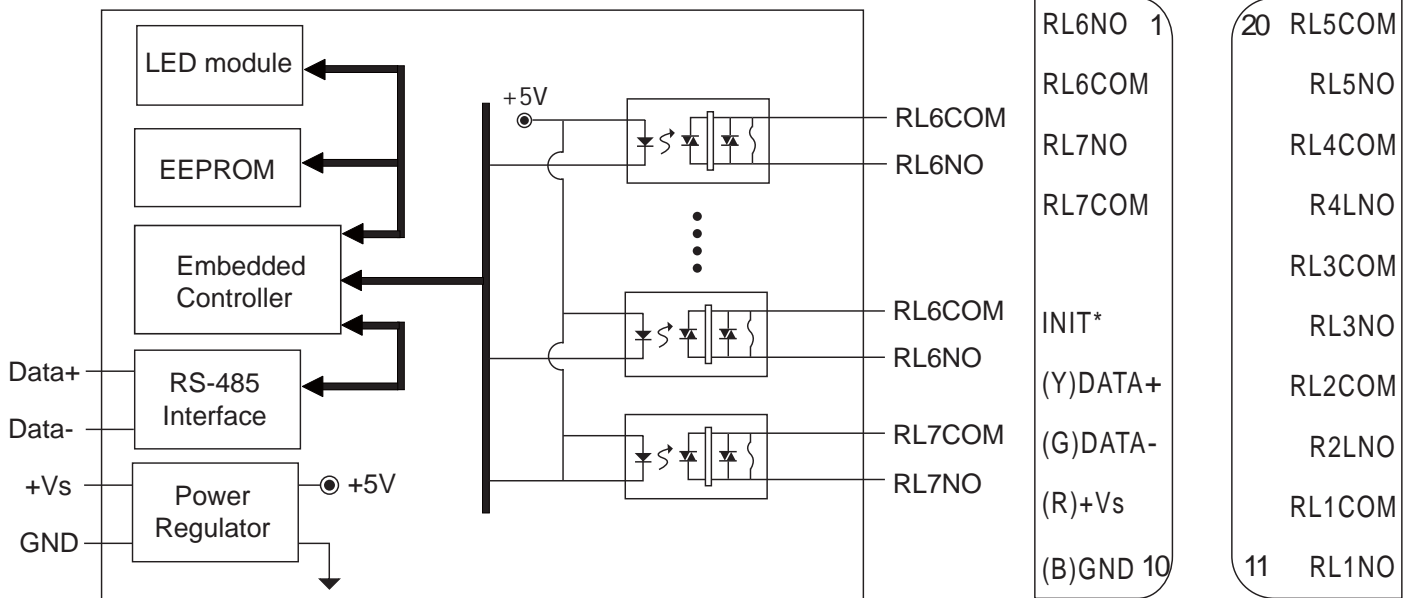
PhotoMos Relay

Ordering Information

| | |
|------------|--|
| i-7066 CR | 7-channel Photo-Mos Relay Module (ROHS) |
| i-7066D CR | 7-channel Photo-Mos Relay Module with LED Display (ROHS) |

Internal I/O Structure

Pin Assignment



Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|-------------------------------|---------------------------------|
| Form A Relay Contact | Relay ON | Relay Off |
| | | |



i-7080 i-7080D



Specifications

Pin Assignment

Counter Input

| | |
|--|--|
| Input channels | 2 independent 32-bit counters, counter 0&1 |
| Input type | Isolated or non-isolated |
| Isolation input level | Logic level 0: +1V max. Logic level 1: +3.5 to 30V |
| Non-isolated input level (programmable) | Logic level 0: 0 to +5V (default= 0.8V) Logic level 1: 0 to +5V (default= 2.4V) |
| Maximum count | 32bit (4,294,967,295) |
| Programmable digital noise filter | 2us to 65ms |
| Alarming | alarm on counter 0 or counter 0 & 1, programmable |
| Counter preset value | programmable |

Digital Output

| | |
|------------------------|------------------------|
| Output channels | 2 |
| Output type | Source, Open-Collector |
| Output voltage | 30V max. |
| Output current | 30mA max. |

Frequency Measurement

| | |
|------------------------|-----------------------------|
| Input frequency | 1Hz to 100KHz max. |
| Get time | 1.0 or 0.1sec, programmable |

Power

| | |
|--------------------------|---|
| Power consumption | 2.0W (max.) (i-7080) / 2.2W (max.) (i-7080D) |
|--------------------------|---|

LED Display

1 LED as Power/ Communication indicator
5-digit readout, Channel 0 or Channel 1 (for i-7080D)

| | | | |
|----------|-----------------|-------------------|--------|
| IN0 | 1 | 20 | DO1/HI |
| GATE0 | | | DO0/LO |
| D.GND | (Non-isolation) | | IN0+ |
| IN1 | | (Photo-isolation) | IN0- |
| GATE1 | | | GATE0+ |
| INIT* | | | GATE0- |
| (Y)DATA+ | | | IN1+ |
| (G)DATA- | | | IN1- |
| (R)+Vs | | | GATE1+ |
| (B)GND | 10 | 11 | GATE1- |

Ordering Information

| | |
|------------|--|
| i-7080 CR | Counter / Frequency input module (RoHS) |
| i-7080D CR | Counter / Frequency input module with LED Display (RoHS) |

i-7000 Modules



i-7080B i-7080BD

Counter/Frequency

Counter/Frequency input with
Battery back up module



Description

- Input signal range can be 1Hz to 100KHz
- Built-in Virtual Battery Back Up for Counter Value
- "G" means gray color.



Specifications

Pin Assignment

Counter Input

| | |
|---|--|
| Input channels | 2 independent 32-bit counters, counter 0&1 |
| Input type | Isolated or non-isolated |
| Isolation input level | Logic level 0: +1V max. Logic level 1: +3.5 to 30V |
| Non-isolated input level (programmable) | Logic level 0: 0 to +5V (default= 0.8V) Logic level 1: 0 to +5V (default= 2.4V) |
| Maximum count | 32bit (4,294,967,295) |
| Programmable digital noise filter | 2us to 65ms |
| Alarming | alarm on counter 0 or counter 0 & 1, programmable |
| Counter preset value | programmable |

Digital Output

| | |
|-----------------|------------------------|
| Output channels | 2 |
| Output type | Source, Open-Collector |
| Output voltage | 30V max. |
| Output current | 30mA max. |

Frequency Measurement

| | |
|-----------------|-----------------------------|
| Input frequency | 1Hz to 100KHz max. |
| Get time | 1.0 or 0.1sec, programmable |

Power

| | |
|-------------------|---|
| Power consumption | 2.0W (max.) (i-7080B-G) / 2.2W (max.) (i-7080BD-G) |
|-------------------|---|

LED Display

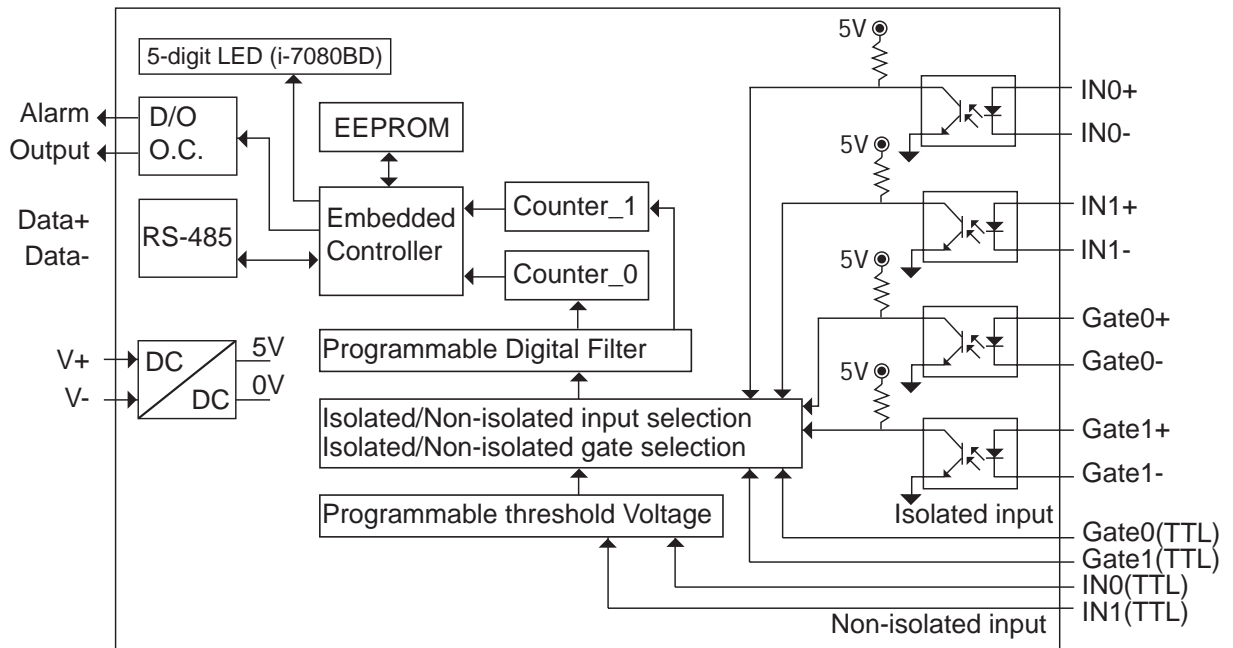
1 LED as Power/ Communication indicator
5-digit readout, Channel 0 or Channel 1 (for i-7080BD-G)

| | | | |
|----------|-----------------|----|--------|
| IN0 | 1 | 20 | DO1/HI |
| GATE0 | | | DO0/LO |
| D.GND | (Non-isolation) | | IN0+ |
| IN1 | | | IN0- |
| GATE1 | | | GATE0+ |
| INIT* | | | GATE0- |
| (Y)DATA+ | | | IN1+ |
| (G)DATA- | | | IN1- |
| (R)+Vs | | | GATE1+ |
| (B)GND | 10 | 11 | GATE1- |

Ordering Information

| | |
|---------------|--|
| i-7080B-G CR | Counter/Frequency input with Battery back up module (RoHS) |
| i-7080BD-G CR | i-7080B-G CR + LED Display |

Internal I/O Structure



Wire Connection

| Counter Type | |
|-----------------|---|
| Input Type | Isolation Counter Input+ — INx+ Counter Input- — INx- Gate Control+ — GATEx+ Gate Control- — GATEx- |
| | Non-isolation Counter Input — INx Gate Control — GATEx Ground — D.GND |
| | Frequency Type Isolation Frequency Input+ — INx+ Frequency Input- — INx- Don't be used — GATEx+ — GATEx- |
| | Non-isolation Frequency Input+ — INx Don't be used — GATEx Frequency Input- — D.GND |
| Resistance Load | |
| Output Type | On state DOx (B)GND |
| | Off state DOx (B)GND |
| | Inductance Load On state DOx (B)GND |
| | Off state DOx (B)GND |

i-7000 Modules

Counter/Frequency

3-axis, 32 bits encoder counter.



i-7083 i-7083D



Specifications

Pin Assignment

Counter Input

| | |
|-------------------|--|
| Input channels | 3-axis |
| Input type | Isolated |
| Encoder mode | Quadrant counting mode, CW/CCW counting mode, Pulse/Dir counting mode |
| Isolation voltage | Input level 5V Logic High : 3.5V~5V Logic Low : 0V~2V Input 12V with external resistor 1K ohm Logic High: 5V~12V Input 24V with external resistor 2K ohm Logic High: 7V~24V Logic Low : 0V~2V |

Maximum count 32bit

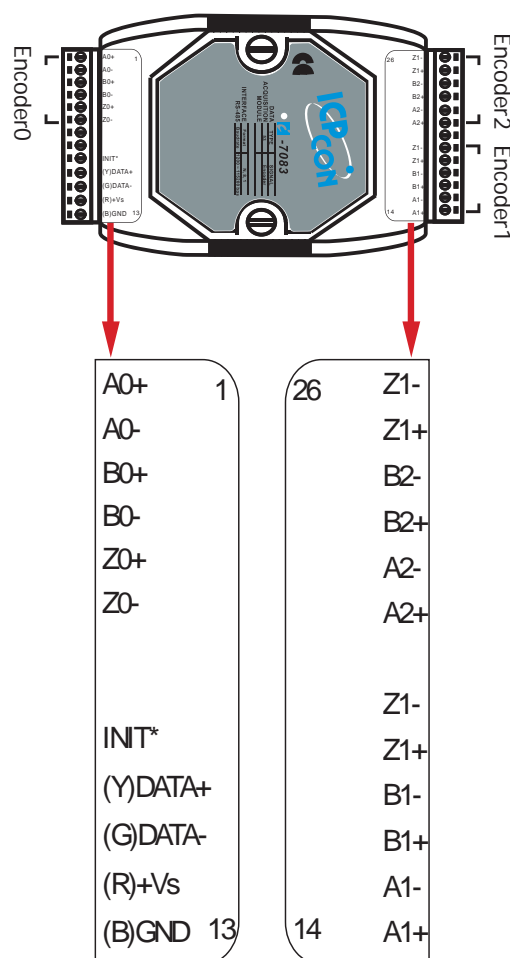
Maximum counting rate 1MHz

Power

Power consumption 1.0W (max.) (i-7083) /
1.5W (max.) (i-7083D)

LED Display

5-digit readout (for i-7083D)



Ordering Information

| | |
|------------|---|
| i-7083 CR | 3-axis, 32 bits encoder counter (RoHS) |
| i-7083D CR | 3-axis, 32 bits encoder counter with LED Display (RoHS) |



3-axis, 32 bits encoder counter with
Battery back up module



Description

- Input signal range can be up to 1MHz
- Built-in battery back up for counter value
- "B" means built-in battery back up for counter value
- "D" means LED Display

i-7083B

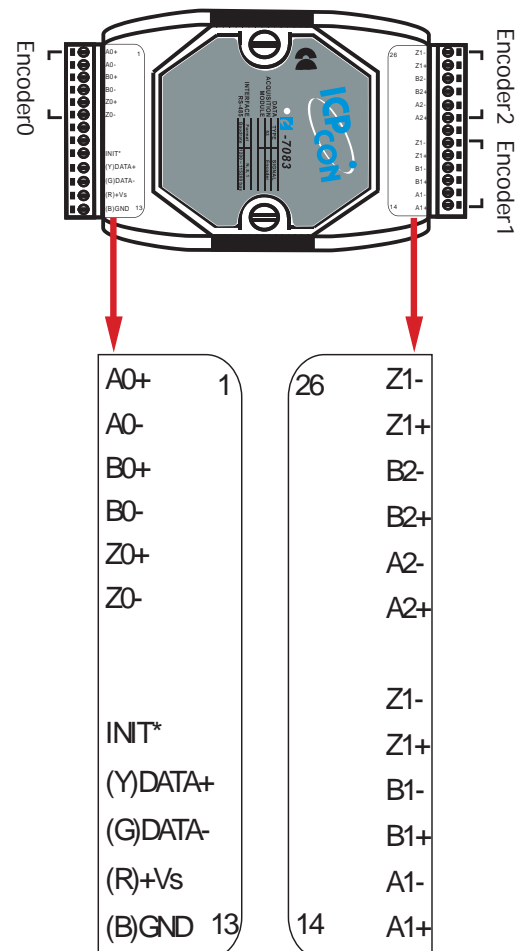
i-7083BD



Specifications

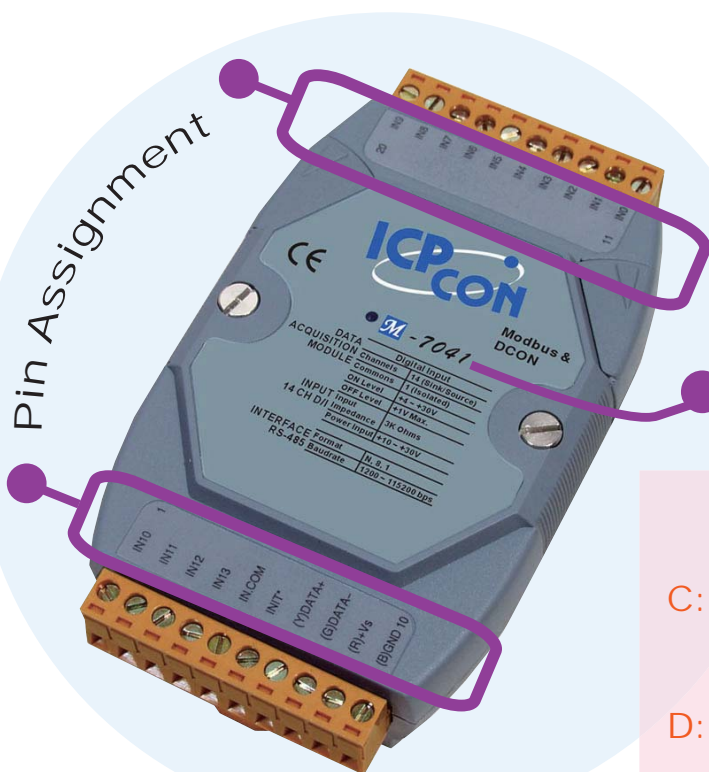
Pin Assignment

| Counter Input | |
|--|--|
| Input channels | 3-axis |
| Input type | Isolated |
| Encoder mode | Quadrant counting mode, CW/CCW counting mode, Pulse/Dir counting mode |
| Isolation voltage | Input level 5V Logic High : 3.5V~5V Logic Low : 0V~2V |
| | Input 12V with external resistor 1K ohm Logic High: 5V~12V |
| | Input 24V with external resistor 2K ohm Logic High: 7V~24V Logic Low : 0V~2V |
| | |
| Maximum count | 32bit |
| Maximum counting rate | 1MHz |
| Built-in battery back up for counter value | |
| Power | |
| Power consumption | 1.0W (max.) (i-7083B) / 1.5W (max.) (i-7083BD) |
| LED Display | |
| 5-digit readout (for i-7083D) | |



Ordering Information

| | |
|-------------|---|
| i-7083B CR | 3-axis, 32 bits encoder counter (RoHS) |
| i-7083BD CR | 3-axis, 32 bits encoder counter with LED Display (RoHS) |



Module Number:

M - 70XX □-□

C: means the modules is for +/-20mA "Current" inputs.

D: means LED Display

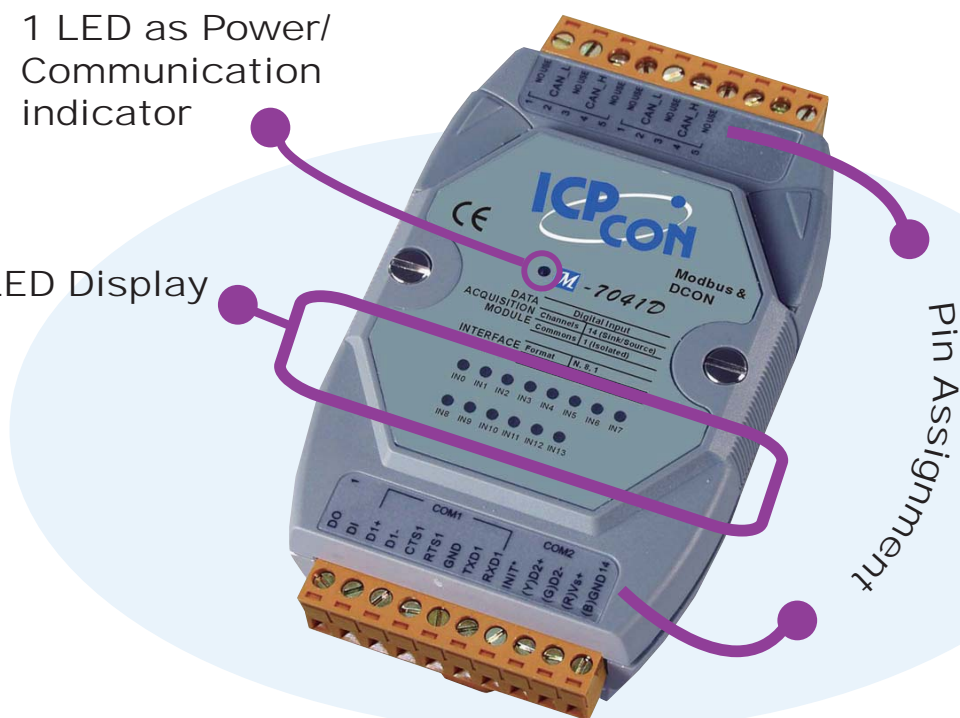
F: means "Fast". It supports 60 sample /second fast mode.

G: means gray color

R: means "Robust". It has 240V high voltage overload protection.

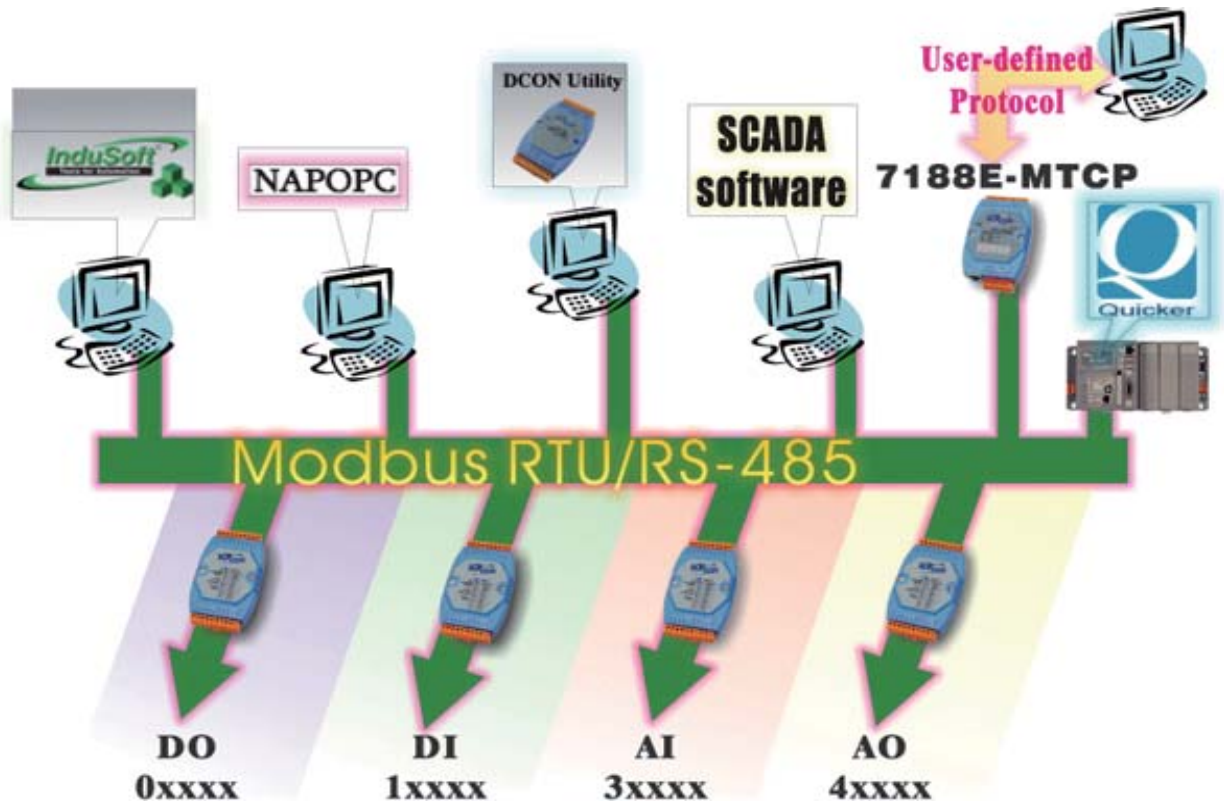
1 LED as Power/
Communication
indicator

LED Display



Introduction

The M-7000 series is a family of network data acquisition and control modules that support Modbus RTU and DCON protocols. With the Modbus RTU protocol, it can easily communicate with most popular SCADA/ HMI software and PLC. It has the same form factor as the I-7000 series.



M-7000 Series Common Features

Isolation Voltage : 3000V DC (inter-module)

Photo-Isolation : 3750 Vrms

Power Supply : +10V ~ +30V DC

Communication Interface : RS-485

Baud Rate : 1200 ~ 115200bps

System :

- Internal dual watchdog , power-on start value and safe value for host failure

Type :

- High voltage overload protection: M-7017R, M-7018R, M-7019R, M-7055
- High digital input voltage, 50 Vdc: M-7055
- Short circuit protection for digital output: M-7055
- Open thermocouple detection: M-7018R, M-7018Z, M-7019R
- Open RTD detection: M-7015, M-7033
- Individual channel configurable: M-7015, M-7018Z, M-7019R

Dimensions : 122 x 72 x 25 (L x W x H)



Selection Guide

M-7000 Modules

Analog Input

AI Modules - Voltage & Current

Page 2-6~9

| Modules | | M-7017R | M-7017RC |
|---------------------|---|--|---------------------------------|
| Analog Input | Resolution | 16-bit (Normal) / 12-bit (Fast) | 16-bit (Normal) / 12-bit (Fast) |
| | Input channel | 8 diff. | 8 diff. |
| | Sampling rate (total) | 10Hz (Normal) / 60Hz (Fast) | 10Hz (Normal) / 60Hz (Fast) |
| | Voltage & current Input * Need external 125Ω resistors | +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA (*) | 0~20mA 4~20mA +/-20mA |
| | Over voltage protection | +/-240Vrms | - |
| | Common voltage | - | +/-200VDC |
| | Power consumption | 1.3W | 1.3W |
| Dual Watchdog Timer | | Yes | Yes |
| Frame Ground | | Yes | Yes |

AI Modules - Thermocouple

Page 2-10~15

| Modules | | M-7018R | M-7018Z | M-7019R |
|---------------------------------|---|--|---|---|
| Analog Input | Resolution | 16 bit | 16 bit | 16 bit |
| | Input channel | 8 diff. | 10 diff. | 8 diff. |
| | Sampling rate (total) | 10 Hz | 10 Hz | 8 Hz |
| | Voltage & current Input * Need external 125Ω resistors ** Jumper selectable | +/-15mV, +/-50mV +/-100mV, +/-500mV +/-1V, +/-2.5V, +/-20mA (*) | +/-15mV, +/-50mV +/-100mV, +/-500mV +/-1V, +/-2.5V +/-20mA, 4~20mA , 0~20mA (*) | +/-15mV, +/-50mV +/-100mV, +/-150mV +/-500mV, +/-1V +/-2.5V, +/-5V, +/-10V +/-20mA (**) |
| | Sensor input | J.K.T.E.R.S.B.N.C.L.M Thermocouple | J.K.T.E.R.S.B.N.C.L.M, LDIN43710 Thermocouple | J.K.T.E.R.S.B.N.C.L.M, LDIN43710 Thermocouple |
| | Over voltage protection | +/-240Vrms | +/-240Vrms | +/-240Vrms |
| Individual Channel Configurable | | - | Yes | Yes |
| Dual Watchdog Timer | | Yes | Yes | Yes |
| Open Wire Detection | | Yes | Yes | Yes |
| Frame Ground | | Yes | Yes | Yes |

AI Modules - RTD

Page 2-16~19

| Modules | | M-7015 | M-7015P | M-7033/ 7033D |
|---|-----------------------|--|--|----------------------------|
| Analog Input | Resolution | 16-bit | 16-bit | 16-bit |
| | Input channel | 6 diff. | 6 diff. | 3 diff. |
| | Sampling rate (total) | 12 Hz | 12 Hz | 15 Hz |
| | Sensor Input | Pt100, Pt1000, Ni120, Cu100, CU1000 | Pt100, Pt1000, Ni120, Cu100, CU1000 | Pt100, Pt1000, Ni120 |
| | Isolation voltage | 3000V | 3000V | 3000V |
| Individual Channel Configurable | | Yes | Yes | - |
| Open Wire Detection | | Yes | Yes | Yes |
| 3-wire RTD lead resistance elimination | | - | Yes | Yes |

Note: M-7015P will be available

AI Modules - Thermistor

Page 2-20~21

| Modules | | M-7005 |
|---------------------------------|-------------------------|--|
| Analog Input | Resolution | 16 bit |
| | Input channel | 8 diff. |
| | Sampling rate | 8 Hz |
| | Sensor input | Precon ST-A3, Fenwell U, YSI L100, YSI L300, YSI L1000, YSI B2252, YSI B3000, YSI B5000, YSI B6000, YSI B10000, YSI H10000, YSI H30000, User-defined |
| | Isolation voltage | 3000V |
| Digital Output | Digital output channels | 6 |
| | High/ Low Alarm | Yes |
| Individual Channel Configurable | | Yes |
| Dual Watchdog Timer | | Yes |
| Frame Ground | | Yes |

AI Modules - Strain Gauge

Page 2-22~23

| Modules | | M-7016/ 7016D |
|------------------------|-------------------------|---|
| Analog Input | Resolution | 16 bit |
| | Input channel | 2 diff. |
| | Sampling rate (total) | 10Hz for 1-channel mode, 2Hz for 2-channel mode |
| | Voltage & Current input | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V, +/-20mA |
| | Sensor input | 4 Wire Strain Gauge |
| Isolation voltage | | 3000V |
| Digital Input & Output | Digital input channels | 1 |
| | Digital output channels | 4 |
| | Event Counter | Yes |
| | High/ Low Alarm | Yes |
| Dual Watchdog Timer | | Yes |
| Input Linear Scaling | | Yes |

AO Modules

Page 2-24~27

| Modules | | M-7022 | M-7024 |
|---------------------|--|---------------|-------------------------------|
| Analog Output | Resolution | 12 bit | 14 bit |
| | Output channels ** channel to channel isolation | 2 (**) | 4 |
| | Voltage output | 0-10V | +/-10V, 0-10V, +/-5V ,0-5V |
| | Current output | 0-20mA,4-20mA | 0-20mA,4-20mA |
| | Power Consumption | 3.0 W | 2.4 W |
| Dual Watchdog Timer | | Yes | Yes |



Selection Guide

M-7000 Modules

DI / DO / DIO

DC Digital Input

Page 2-28~35

| Modules | | M-7041/ 7041D | M-7051/ 7051D | M-7052/ 7052D | M-7053 FG/ 7053D FG |
|------------------------|------------------------|------------------|--------------------------------------|--|------------------------|
| AC Digital Input | Digital input channels | 14 (Sink/Source) | 16 (Sink/Source) | 8 (Sink/Source) | 16 (Source) |
| | Input type | Common Source | Common Source or Common Ground | 6 Differential & 2 Common Ground | Dry Contact |
| | On voltage level | +4 to +30V | +10 to +50V | +4 to +30V | +4 to +30V |
| | Off voltage level | +1V Max. | +4V Max. | +1V Max. | +1V Max. |
| | Input impedance | 3K Ohms | 10K Ohms | 3K Ohms | 820 Ohms |
| | Isolation voltage | 3750Vrms | 3750Vrms | 5000Vrms | - |
| Counter | Channels | 14 | 16 | 8 | 16 |
| | Input frequency | 100 Hz | 100 Hz | 100 Hz | 100 Hz |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes |

DC Digital Output

Page 2-36~37

| Modules | | M-7045/ 7045D |
|--------------------------|-------------------------|------------------------|
| DC Digital Output | Digital output channels | 16 (Source) |
| | Output type | Open Source (N-MOSFET) |
| | Load voltage | +10 to +40V |
| | Max load current | 650mA |
| | Isolation voltage | 3750Vrms |
| | Power consumption | 1.0W/ 1.8W |
| Short-Circuit Protection | | Yes |
| Dual Watchdog Timer | | Yes |

DC Digital Input & Output

Page 2-38~41

| Modules | | M-7050/ 7050D | M-7055/ 7055D |
|---------------------------------------|---|--|--|
| DC Digital Input & Output | Digital input channels | 7 (Sink) Non-Isolation | 8 (Sink/Source) Isolation with common |
| | Input impedance | - | 10K Ohms |
| | ON voltage level | +4 to +30V | +10 to +50V |
| | OFF voltage level | +1V Max. | +4V Max. |
| | Digital Output channels (Open collector) | 8 (Sink/Source) Isolation with common | 8 (Sink/Source) Isolation with common |
| | Load voltage | +10 to +30V | +10 to +40V |
| | Max load current | 30mA | 650mA |
| Counter | Channels | 7 | 16 |
| | Input frequency | 100 Hz | 100 Hz |
| Short-Circuit Protection | | - | Yes |
| Dual Watchdog Timer | | Yes | Yes |

Power Relay Output

Page 2-42~45

| Modules | | M-7060/ 7060D | M-7067/ 7067D |
|--------------------------------|-------------------------|---|-------------------------------|
| Digital Input & Digital Output | Digital input channels | 4 Isolation (3750V) | - |
| | Input impedance | 3K Ohms | - |
| | ON voltage level | +4 to +30V | - |
| | OFF voltage level | +1V Max. | - |
| | Digital Output channels | 4 channel Relay Form A x 2 Form C x 2 | 7 channel Relay Form A x 7 |
| | Contact rating | 0.6A@125VAC 2A@30VDC | 0.5A@120VAC 1.0A@24VDC |
| | Surge strength | 500V | 1500V |
| | Operate time | 3mS | 5mS Max |
| | Release time | 2mS | 2mS |
| | Min life | 5*10 ⁵ ops. | 10 ⁵ ops. |
| | Power consumption | 1.3W/ 1.9W | 1.5W/ 2.2W |
| | Channels | 4 | - |
| Counter | Input frequency | 100 Hz | - |
| | Dual Watchdog Timer | Yes | Yes |

Counter/ Frequency

Page 2-46~47

| Modules | | M-7080/ 80D/ 80B/ 80BD |
|--------------------------------|---------------------------|--|
| Counter Input & Digital Output | Input channels | 2 independent |
| | Input type | Isolated or non-isolated |
| | Max. count | 32 bit |
| | Max. counting rate | 100K Hz |
| | Isolation input voltage | Logic level 0: +1V max. Logic level 1: +3.5 to 30V |
| | Non-Isolation input level | Programmable threshold voltage Logic level 0: 0 to +5V (default= 0.8V) Logic level 1: 0 to +5V (default= 2.4V) |
| | Isolation voltage | 3750Vrms |
| | Output channel | 2 |
| | Output type | Open-Collector |
| | Output voltage | 30V max. |
| | Output current | 30mA max. |
| | Power consumption | 2.0W/ 2.2W |
| | Dual Watchdog Timer | Yes |

Note: M-7080B/BD: built-in virtual battery back up for counter value



M-7000 AI Modules



M-7017R

Analog Input

Voltage & Current

8-channel Analog Input Module with
High Over Voltage Protection



Description

- Measure V, mV, mA
- “R” means “Robust”. It has 240V high voltage overload protection. It also supports the fast mode as “F” model.
- Support Modbus and DCON protocols.



Specifications

| ■ Analog Input | | | |
|---|---|---|--|
| Input channels | 8 Differential | Overvoltage protection | 240Vrms |
| Input type | +/-500mV, +/-1V, +/-5V, +/-10V +/-20mA | Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total) | Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.5% of FSR |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 86 dB |
| Span drift | +/- 25 μV/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | Normal Mode : 15.7Hz, Fast Mode : 78.7Hz | Intra-module isolation, Field to Logic : 3000 VDC | |
| Input impedance | >1M Ohms | 4KV ESD protection | Yes, Contact for each terminal |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator | | Input | +10 to +30 Vdc |
| | | Power consumption | 1.3W |

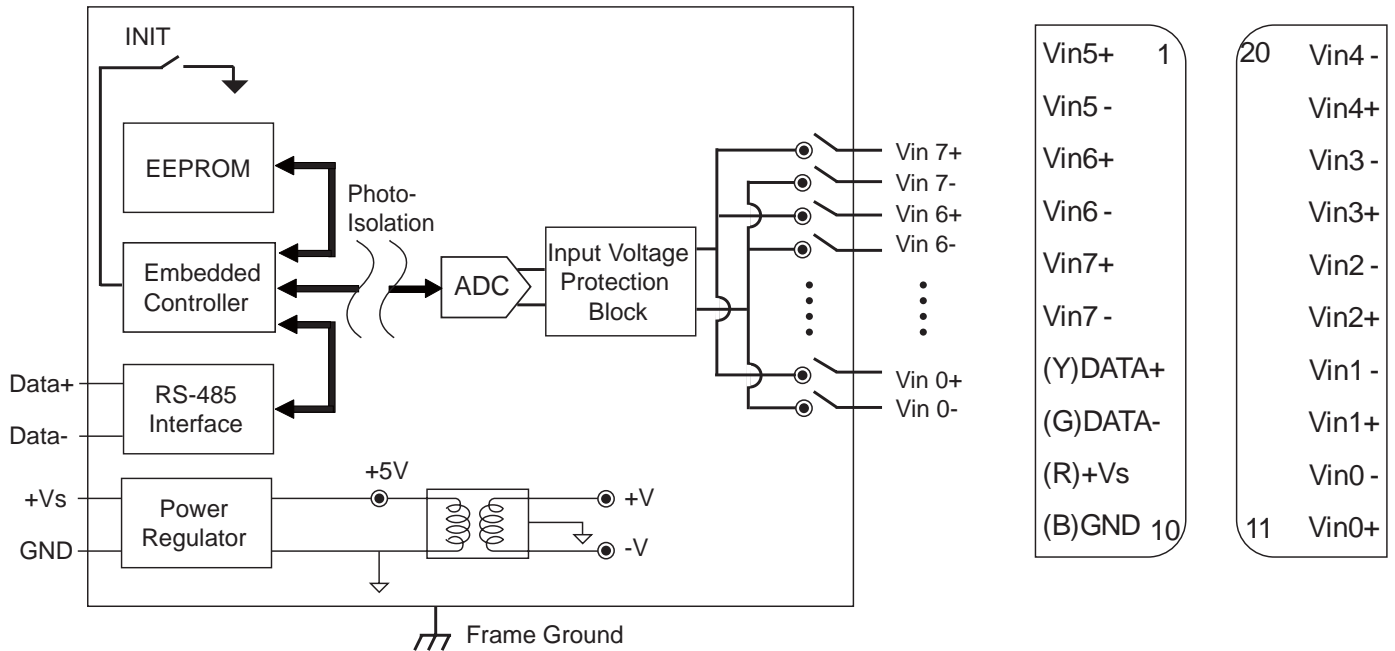
Note : M-7017R is better than M-7017/ 7017C

Ordering Information

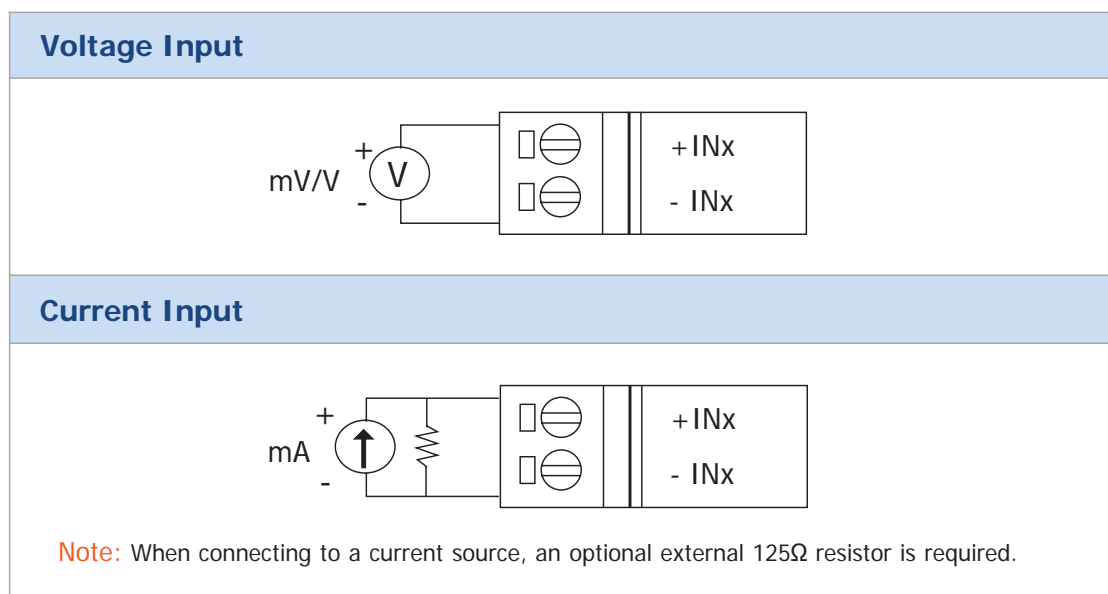
| | |
|--------------|---|
| M-7017R-G CR | 8-channel Analog Input Module with high over voltage protection (Gray Cover) (RoHS) |
|--------------|---|

Internal I/O Structure

Pin Assignment



Wire Connection





M-7000 AI Modules

Analog Input

Voltage & Current

8-channel Current Input Module with
High Common Voltage Protection



M-7017RC

Description

- Measure mA
- “R” means “Robust”. It has 240V high voltage overload protection. It also supports the fast mode as “F” model.
- “C” means the module is for “Current” inputs. No external resistor required.
- Support Modbus and DCON protocols.



Specifications

Analog Input

| | | | |
|---|---|-----------------------|--|
| Input channels | 8 Differential | Common voltage | ±200VDC |
| Input type | +/-20mA, 0~20mA, 4~20mA | Input impedance | 1250hms |
| Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit | Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.5% of FSR |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total) | Band width | Normal Mode : 15.7Hz Fast Mode : 78.7Hz |
| Zero drift | +/- 20µV/ °C | Common mode rejection | 86 dB |
| Span drift | +/-25ppm/°C | Normal mode rejection | 100 dB |
| Intra-module isolation, Field to Logic : 3000 VDC | | 4KV ESD protection | Yes, Contact for each terminal |

LED Display

1 LED as Power/ Communication Indicator

Power

Input
Power consumption +10 to +30 Vdc
1.3W

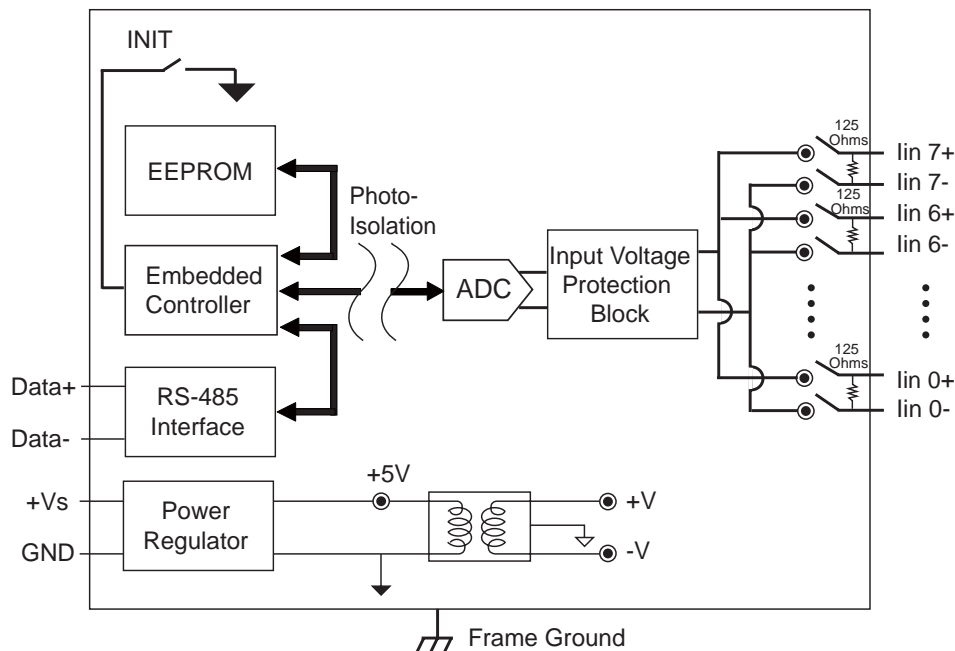
Note : M-7017RC is more robust than M-7017/ 7017C

Ordering Information

| | |
|---------------|--|
| M-7017RC-G CR | 8-channel Current Input Module (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure

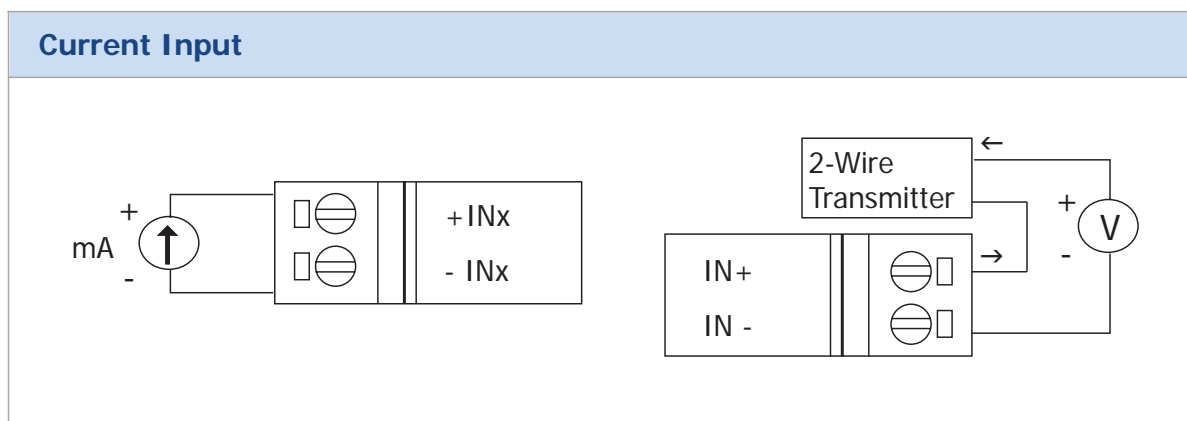
Pin Assignment



lin5+ 1
lin5-
lin6+
lin6-
lin7+
lin7-
(Y)DATA+
(G)DATA-
(R)+Vs
(B)GND 10

20 lin4-
lin4+
lin3-
lin3+
lin2-
lin2+
lin1-
lin1+
lin0-
lin0+ 11

Wire Connection





M-7000 AI Modules



M-7018R

Analog Input

Thermocouple

8-channel Analog Input Module with
High Over Voltage Protection



Description

- Measure V, mV, mA, temperature
(With thermocouple sensor)
- “R” means “Robust”. It has 240V high
voltage overload protection.
- Support Modbus and DCON protocols.



Specifications

| ■ Analog Input | | | |
|---|--|-------------------------|--------------------------------|
| Input channels | 8 Differential | Over voltage protection | 240Vrms |
| Input type | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V +/-20mA (requires optional external 125 ohm resistor) Thermocouple Type J, K, T, E, R, S, B, N, C, L, M | | Resolution : 16-bit |
| Sampling rate | 10 Samples/ Second | Band width | 15.7Hz |
| Accuracy | +/- 0.1% | Common mode rejection | 86dB min. |
| Zero drift | +/- 10μV/ °C | Normal mode rejection | 100 dB |
| Span drift | 25ppm/°C | Open wire detection | Yes |
| Input impedance | 1M Ohms | 4KV ESD protection | Yes, Contact for each terminal |
| Intra-module isolation, Field to Logic : 3000 VDC | | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator | | Input Power consumption | +10 to +30 Vdc 1.0W |

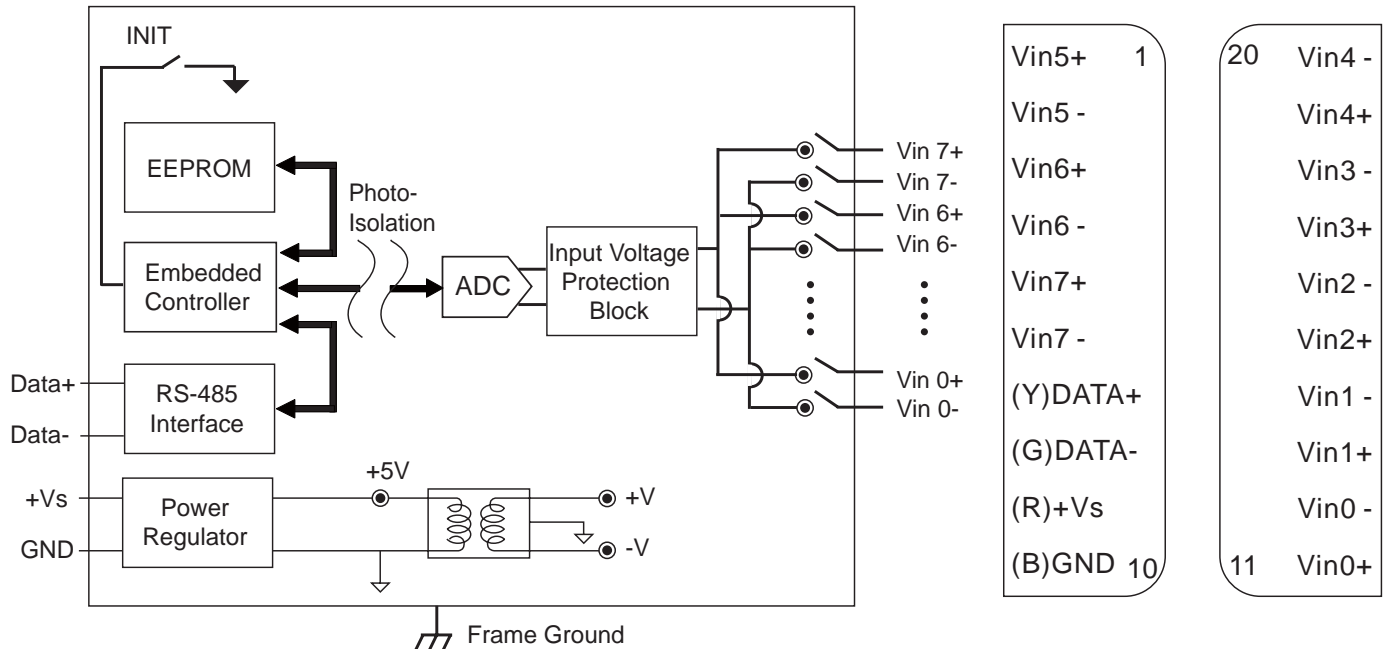
Note : M-7018R is better than M-7018

Ordering Information

| | |
|--------------|--|
| M-7018R-G CR | 8-channel Analog Input Module with high over voltage protection(Gray Cover) (RoHS) |
|--------------|--|

Internal I/O Structure

Pin Assignment

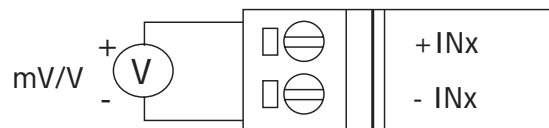


Thermocouple Type

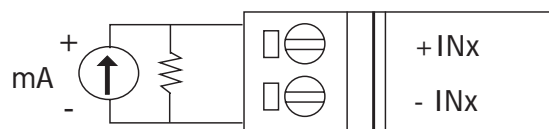
Wire Connection

| Code | Type | Range°C |
|------|--------------|--------------|
| 0E | J | -210 ~ +760 |
| 0F | K | -270 ~ +1372 |
| 10 | T | -270 ~ +400 |
| 11 | E | -270 ~ +1000 |
| 12 | R | 0 ~ +1768 |
| 13 | S | 0 ~ +1768 |
| 14 | B | 0 ~ +1820 |
| 15 | N | -270 ~ 1300 |
| 16 | C | 0 ~ 2320 |
| 17 | L | -200 ~ +800 |
| 18 | M | -200 ~ +100 |
| 19 | L2(DIN43710) | -200 ~ +900 |

Voltage Input

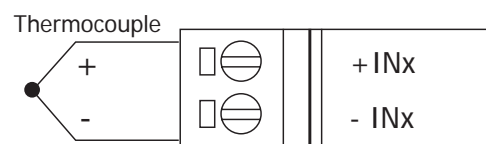


Current Input



Note: When connecting to a current source, an optional external 125Ω resistor is required.

Thermocouple Input



M-7000 AI Modules

Analog Input

Thermocouple

10-channel Thermocouple Input Module with **High Voltage Protection**



Description

- Measure V, mV, mA, temperature (With thermocouple sensor)
- "R" means "Robust". It has 240V high voltage overload protection.
- Support Modbus and DCON protocols.
- "G" means gray color



M-7018Z DB-1820



Specifications

| ■ Analog Input | | | |
|---|--|----------------------------------|-----------|
| Input channels | 10 Differential | Resolution | 16-bit |
| Input type | +/- 15mV, +/- 50mV, +/- 100mV, +/- 500mV, +/- 1V, +/- 2.5V, +/-20mA, 0~20mA, 4~20mA (Requires Optional External 125 Ohm Resistor) Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710) | | |
| Sampling rate | 10 Samples/ sec (Total) | Overvoltage protection | 240 Vrms |
| Zero drift | +/- 0.5µV/ °C | Common mode rejection | 150 dB |
| Span drift | +/- 25 ppm/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 15.7Hz | Input impedance | 20M Ohms |
| Accuracy | +/- 0.1% | Open wire detection | Yes |
| Intra-module isolation, Field to Logic : 3000 VDC | | Individual channel configuration | Yes |
| ■ DB-1820 | | | |
| Wire strip length | 4~5mm | Wire range | 16~24 AWG |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator | | Power consumption | 1.0W |

Note: M-7018Z-G is more robust than M-7018

Ordering Information

| | |
|----------------|---|
| M-7018Z-G/S CR | 10-channel Thermocouple Input Module with High Voltage Protection (RoHS) include M-7018Z module and DB-1820 daughter board |
|----------------|---|

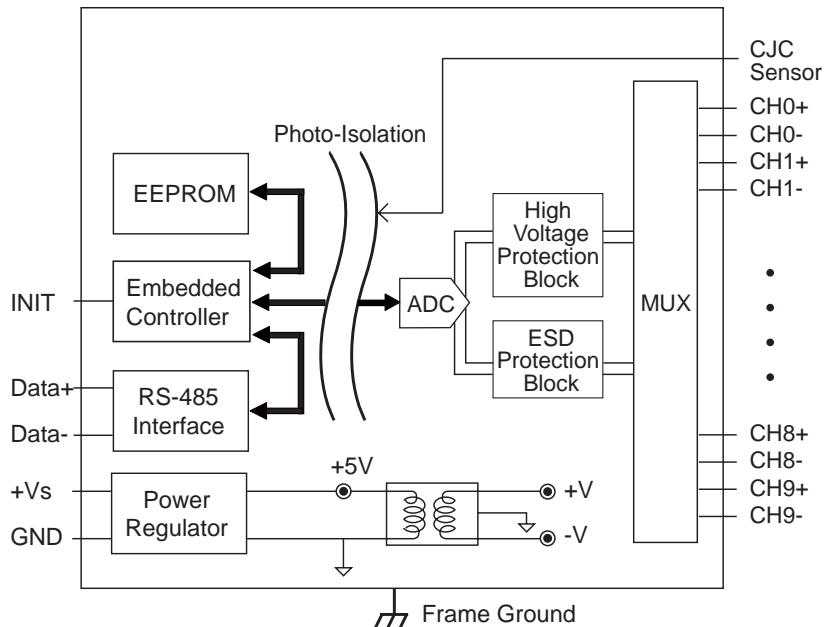
Suggested Accessory

| | |
|----------|---|
| CD-2518D | 25F-25M 1.8m cable with DIN-Rail Mount of DB-1820 |
| CD-25015 | 25F-25M 15cm cable with DIN-Rail Mount of DB-1820 |



Internal I/O Structure

Pin Assignment For M-7018Z



| Name | Terminal No. | Name |
|------|--------------|-------------|
| +5V | 01 | 14 AGND |
| CJC | 02 | 15 CH0+ |
| CH0- | 03 | 16 CH1+ |
| CH1- | 04 | 17 CH2+ |
| CH2- | 05 | 18 CH3+ |
| CH3- | 06 | 19 CH4+ |
| CH4- | 07 | 20 CH5+ |
| CH5- | 08 | 21 CH6+ |
| CH6- | 09 | 22 CH7+ |
| CH7- | 10 | 23 CH8+ |
| CH8- | 11 | 24 CH9+ |
| CH9- | 12 | 25 N.C. |
| N.C. | 13 | Shield F.G. |

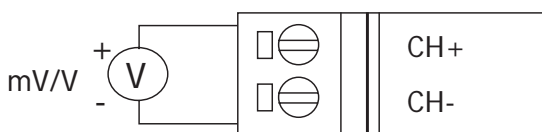
25-Pin Female D-Sub Connector

Wire Connection

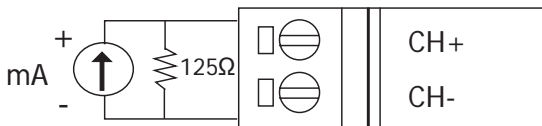
Thermocouple Type

Pin Assignment For DB-1820

Voltage Input

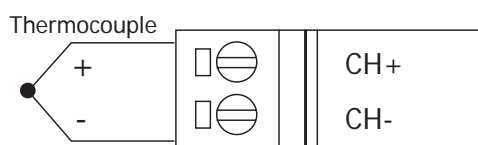


Current Input



Note: When connecting to a current source, an optional external 125Ω resistor is required.

Thermocouple Input



| Type | Range°C |
|--------------|--------------|
| J | -210 ~ +760 |
| K | -270 ~ +1372 |
| T | -270 ~ +400 |
| E | -270 ~ +1000 |
| R | 0 ~ +1768 |
| S | 0 ~ +1768 |
| B | 0 ~ +1820 |
| N | -270 ~ 1300 |
| C | 0 ~ 2320 |
| L | -200 ~ +800 |
| M | -200 ~ +100 |
| L (DIN43710) | -200 ~ +900 |

| NO. | Name | NO. | Name |
|-----|------|-----|------|
| 1 | F.G. | 13 | F.G. |
| 2 | AGND | 14 | AGND |
| 3 | CH0+ | 15 | CH5+ |
| 4 | CH0- | 16 | CH5- |
| 5 | CH1+ | 17 | CH6+ |
| 6 | CH1- | 18 | CH6- |
| 7 | CH2+ | 19 | CH7+ |
| 8 | CH2- | 20 | CH7- |
| 9 | CH3+ | 21 | CH8+ |
| 10 | CH3- | 22 | CH8- |
| 11 | CH4+ | 23 | CH9+ |
| 12 | CH4- | 24 | CH9- |

M-7000 AI Modules

Analog Input

Thermocouple

8-channel Universal Analog Input Module with **High Voltage Protection**



Description

- Measure V, mV, mA, temperature (With thermocouple sensor)
- “R” means “Robust”. It has 240V high voltage overload protection.
- Support Modbus and DCON protocols.

M-7019R



Specifications

Analog Input

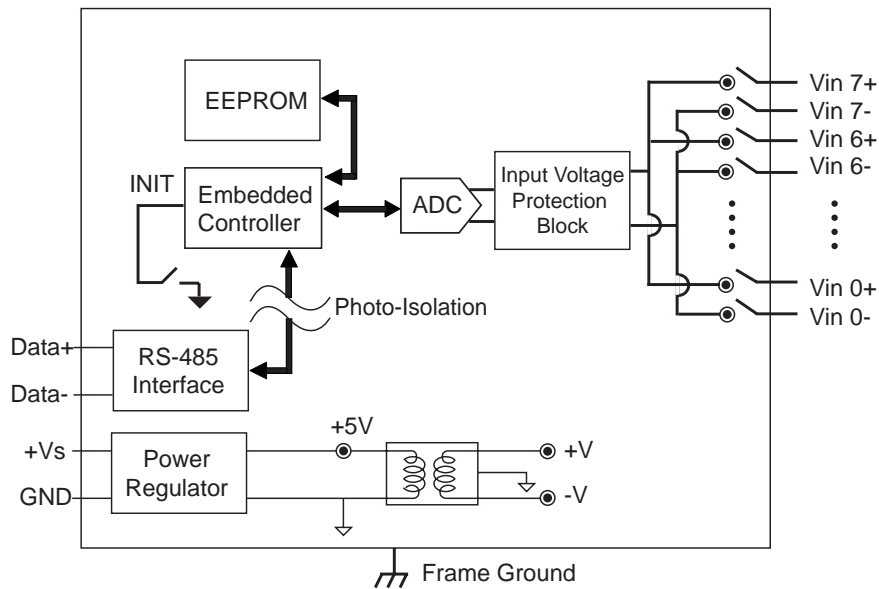
| | | | |
|-----------------------|--|---|--------------------------------|
| Input channels | 8 differential | CMR @ 50/60 Hz | 86 dB Typical |
| Input type | mV, V, mA, Thermocouple | Input impedance | >2M Ohms |
| Voltage range | ± 15mV, ± 50mV, ± 100mV, ± 150mV, ± 500mV, ± 1V, ± 2.5V, ± 5V, ± 10V | Isolation Voltage | 3000 Vdc |
| Current range | ± 20mA (Jumper selectable) | Indication LED light | For power and communication |
| Thermocouple | Type J, K, T, E, R, S, B, N, C, L, M, L2 | Over voltage protection | 240 Vrms |
| Sample rate | 8 Samples/Second (Total) | 4KV ESD protection | Yes, Contact for each terminal |
| -3dB bandwidth | 5.24 Hz | Support Modbus and DCON protocol | |
| Resolution | 16-bits | Individual channel configurable | |
| Accuracy | For +/-15mV: +/- 0.3% of FSR Others: +/- 0.15% of FSR | Open wire detection | |
| | | Power | |
| | | Power consumption | 1.2W |

Ordering Information

| | |
|--------------|--|
| M-7019R-G CR | 8-channel universal Analog Input Module with High voltage Protection (Gray Cover) (RoHS) |
|--------------|--|

Internal I/O Structure

Pin Assignment



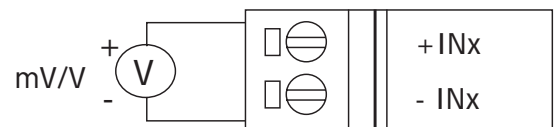
| | | | |
|----------|----|----|--------|
| Vin5+ | 1 | 20 | Vin4 - |
| Vin5 - | | | Vin4+ |
| Vin6+ | | | Vin3 - |
| Vin6 - | | | Vin3+ |
| Vin7+ | | | Vin2 - |
| Vin7 - | | | Vin2+ |
| (Y)DATA+ | | | Vin1 - |
| (G)DATA- | | | Vin1+ |
| (R)+Vs | | | Vin0 - |
| (B)GND | 10 | 11 | Vin0+ |

Thermocouple Type

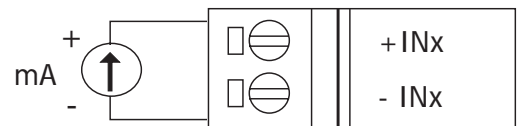
Wire Connection

| Type Code | Type | Range °C |
|-----------|--------------|--------------|
| 0E | J | -210 ~ +760 |
| 0F | K | -270 ~ +1372 |
| 10 | T | -270 ~ +400 |
| 11 | E | -270 ~ +1000 |
| 12 | R | 0 ~ +1768 |
| 13 | S | 0 ~ +1768 |
| 14 | B | 0 ~ +1820 |
| 15 | N | -270 ~ 1300 |
| 16 | C | 0 ~ 2320 |
| 17 | L | -200 ~ +800 |
| 18 | M | -200 ~ +100 |
| 19 | L2(DIN43710) | -200 ~ +900 |

Voltage Input

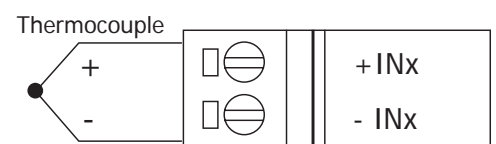


Current Input



Note: When a channel is connected to a current source, the corresponding jumper should be shorted (need to open the cover of the module), see section 1.7.2 of user manual for detail.

Thermocouple Input



M-7000 AI Modules

Analog Input

RTD

6-channel RTD Input Module



M-7015



Specifications

| ■ Analog Input | | | |
|---|-------------------------------------|---|--------------|
| Input channels | 6 | -3dB bandwidth | 5.24 HZ |
| Input type | RTD | Zero drift | +/- 20μV/ °C |
| Wire connection | 2/3 wire | Span drift | +/-25ppm/°C |
| RTD type | Pt100, Pt1000, Ni120, Cu100, Cu1000 | Common mode rejection | Typical 86dB |
| Resolution | 16-bit | Normal mode rejection | 100 dB |
| Sampling rate | 12 samples/ second (Total) | Voltage input impedance | >1M Ohms |
| Accuracy | +/- 0.05% | Open wire detection | Yes |
| 4KV ESD protection | Yes, Contact for each terminal | Individual channel configurable : Yes | |
| Intra-module Isolation, Field to Logic : 3000 VDC | | | |
| ■ Power | | ■ LED Display | |
| Power consumption | 1.1W | 1 LED as Power/ Communication indicator | |

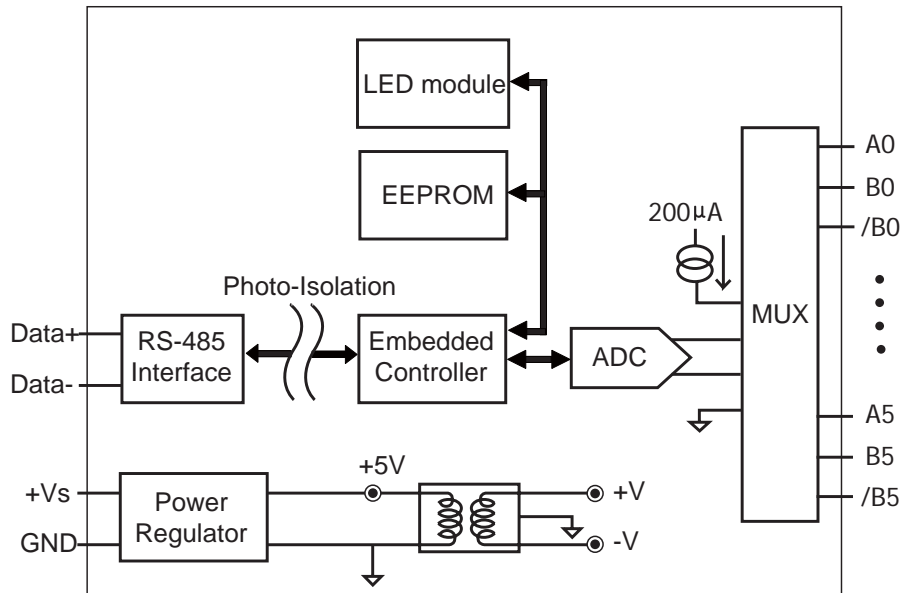
NOTE: We recommend to choose i-7015P for long distance RTD line

Ordering Information

| | |
|-------------|--|
| M-7015-G CR | 6-channel RTD Input Module (Gray Cover) (RoHS) |
|-------------|--|

Internal I/O Structure

Pin Assignment



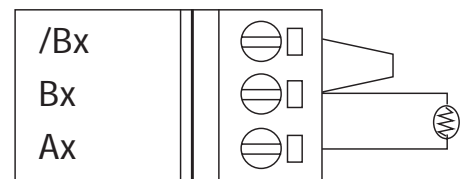
| | | | |
|----------|----|----|-----|
| B4 | 1 | 26 | /B4 |
| A4 | | | /B3 |
| /B5 | | | B3 |
| B5 | | | A3 |
| A5 | | | /B2 |
| (Y)DATA+ | | | B2 |
| (G)DATA- | | | A2 |
| (R)+Vs | | | /B1 |
| (B)GND | | | B1 |
| (Y)DATA+ | | | A1 |
| (G)DATA- | | | /B0 |
| (R)+Vs | | | B0 |
| (B)GND | 13 | 14 | A0 |

RTD Type

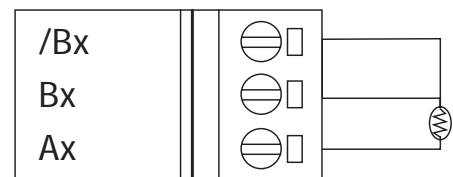
Wire Connection

| Code | Type | Range °C |
|------|------------------------------------|-----------|
| 20 | Platinum 100, $\alpha = 0.00385$ | -100~100 |
| 21 | Platinum 100, $\alpha = 0.00385$ | 0~100 |
| 22 | Platinum 100, $\alpha = 0.00385$ | 0~200 |
| 23 | Platinum 100, $\alpha = 0.00385$ | 0~600 |
| 24 | Platinum 100, $\alpha = 0.003916$ | -100~100 |
| 25 | Platinum 100, $\alpha = 0.003916$ | 0~100 |
| 26 | Platinum 100, $\alpha = 0.003916$ | 0~200 |
| 27 | Platinum 100, $\alpha = 0.003916$ | 0~600 |
| 28 | Nickel 120 | -80~100 |
| 29 | Nickel 120 | 0~100 |
| 2A | Platinum 1000, $\alpha = 0.00385$ | -200~600 |
| 2B | Cu 100 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2C | Cu 100 at 25°C, $\alpha = 0.00427$ | 0~200 |
| 2D | Cu 1000 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2E | PT 100, $\alpha = 0.00385$ | -200~200 |
| 2F | PT 100, $\alpha = 0.003916$ | -200~200 |
| 80 | PT 100, $\alpha = 0.00385$ | -200~600 |
| 81 | PT 100, $\alpha = 0.003916$ | -200~600 |

2 Wire RTD



3 Wire RTD



M-7000 AI Modules

Analog Input

RTD

3-channel RTD Input Module



Description

- Measure temperature with RTD sensor
- M-7033D : M-7033 with LED Display
- Support Modbus and DCON protocols.

M-7033 M-7033D



Specifications

Pin Assignment

Analog Input

| | |
|-----------------------|---|
| Input channels | 3 |
| Input type | RTD |
| Wire connection | 2/3/4 wire |
| RTD type | Pt100 $\alpha=0.00385$, Pt100 $\alpha=0.003916$, Ni120, Pt1000 $\alpha=0.00385$ |
| Resolution | 16-bit |
| Sampling rate | 15/12.5 samples/ second while filter at 60/ 50Hz |
| Accuracy | +/-0.1% |
| Bandwidth | 15.7Hz |
| Span drift | +/- 25 $\mu V/ ^\circ C$ |
| Zero drift | +/- 0.5 $\mu V/ ^\circ C$ |
| Normal mode rejection | 100dB min |
| Common mode rejection | 150dB min |
| Open wire detection | Yes |

Intra-module isolation, field to logic : 3000 VDC

LED Display

1 LED as Power/ Communication Indicator
4 1/2 digits (for i-7033D)

Power

Power consumption 1.0 W (i-7033) / 1.6W (i-7033D)

+IEXC2 1
+SENSE2
-SENSE2
-IEXC2
A.GND
INIT*
(Y)DATA+
(G)DATA-
(R)+Vs
(B)GND 10

20 A.GND
-IEXC1
-SENSE1
+SENSE1
+IEXC1
A.GND
-IEXC0
-SENSE0
+SENSE0
11 +IEXC0

Ordering Information

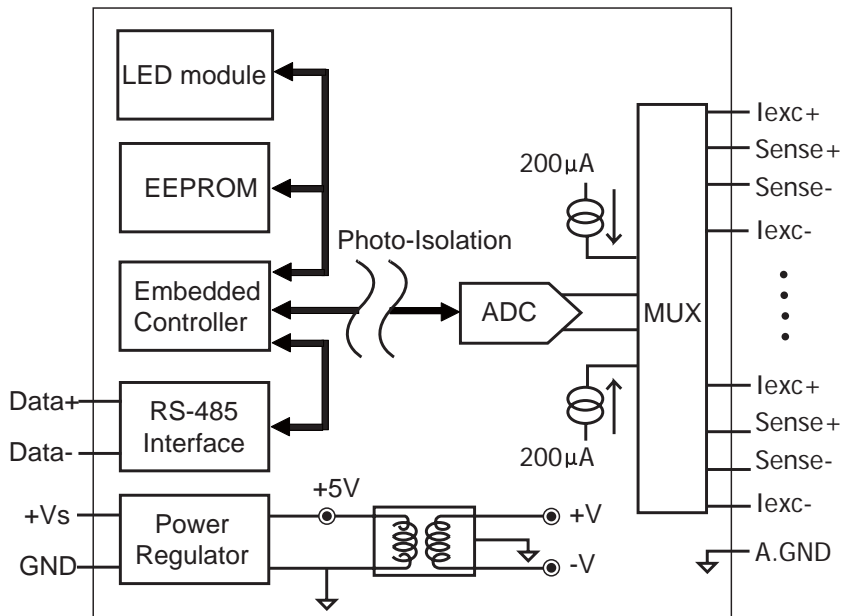
M-7033-G CR

3-channel RTD Input Module (Gray Cover) (RoHS)

M-7033D-G CR

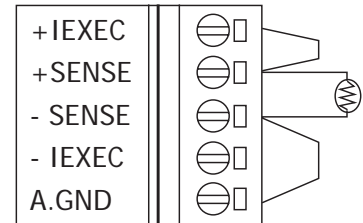
3-channel RTD Input Module with LED display (Gray Cover) (RoHS)

Internal I/O Structure

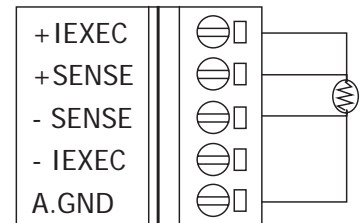


Wire Connection

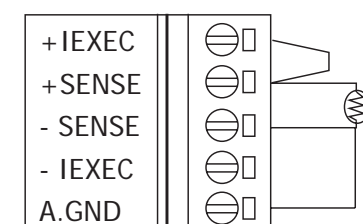
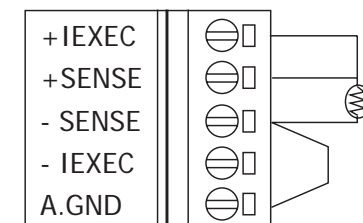
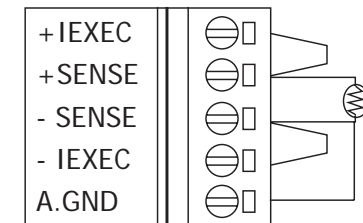
2 Wire RTD



3 Wire RTD



4 Wire RTD



Thermocouple Type

| Code | Type | Range °C |
|------|-----------------------------------|----------|
| 20 | Platinum 100, $\alpha = 0.00385$ | -100~100 |
| 21 | Platinum 100, $\alpha = 0.00385$ | 0~100 |
| 22 | Platinum 100, $\alpha = 0.00385$ | 0~200 |
| 23 | Platinum 100, $\alpha = 0.00385$ | 0~600 |
| 24 | Platinum 100, $\alpha = 0.003916$ | -100~100 |
| 25 | Platinum 100, $\alpha = 0.003916$ | 0~100 |
| 26 | Platinum 100, $\alpha = 0.003916$ | 0~200 |
| 27 | Platinum 100, $\alpha = 0.003916$ | 0~600 |
| 28 | Nickel 120 | -80~100 |
| 29 | Nickel 120 | 0~100 |
| 2A | Platinum 1000, $\alpha = 0.00385$ | -200~600 |
| 2E | PT 100, $\alpha = 0.00385$ | -200~200 |
| 2F | PT 100, $\alpha = 0.003916$ | -200~200 |
| 80 | PT 100, $\alpha = 0.00385$ | -200~600 |
| 81 | PT 100, $\alpha = 0.003916$ | -200~600 |



M-7000 AI Modules

Analog Input

Thermistor

8-channel Thermistor Input and
6-channel Alarm Output Module



M-7005

Description

- Measure temperature with thermistor
- Support Modbus and DCON protocols.



Specifications

Analog Input

| | |
|---|--|
| Input channels | 8 differential |
| Input type | Thermistor |
| Thermistor type | Precon ST-A3, Fenwell U, YSI L100, YSI L300, YSI L1000, YSI B2252, YSI B3000, YSI B5000, YSI B6000, YSI B10000, YSI H10000, YSI H30000, User-defined |
| Sample rate | 8 Samples/Second (Total) |
| Resolution | 16-bit |
| Accuracy | ± 0.1% |
| Zero drift | +/-20uV/°C |
| Span drift | +/-25 ppm/°C |
| Common mode rejection | 86dB |
| Normal mode rejection | 100dB |
| Voltage input impedance | >1M Ohms |
| Individual channel configurable: | Yes |
| Open wire detection | Yes |
| Intra-module isolation, field to logic: | Yes |

Digital Output

| | |
|-----------------|----------------------------------|
| Output channels | 6 |
| Output type | NPN, Sink, Open Collector to 30V |
| Output load | 100mA max. per channel |

Power

| | |
|-------------------|------|
| Power consumption | 1.1W |
|-------------------|------|

LED Display

1 LED as Power/ Communication indicator

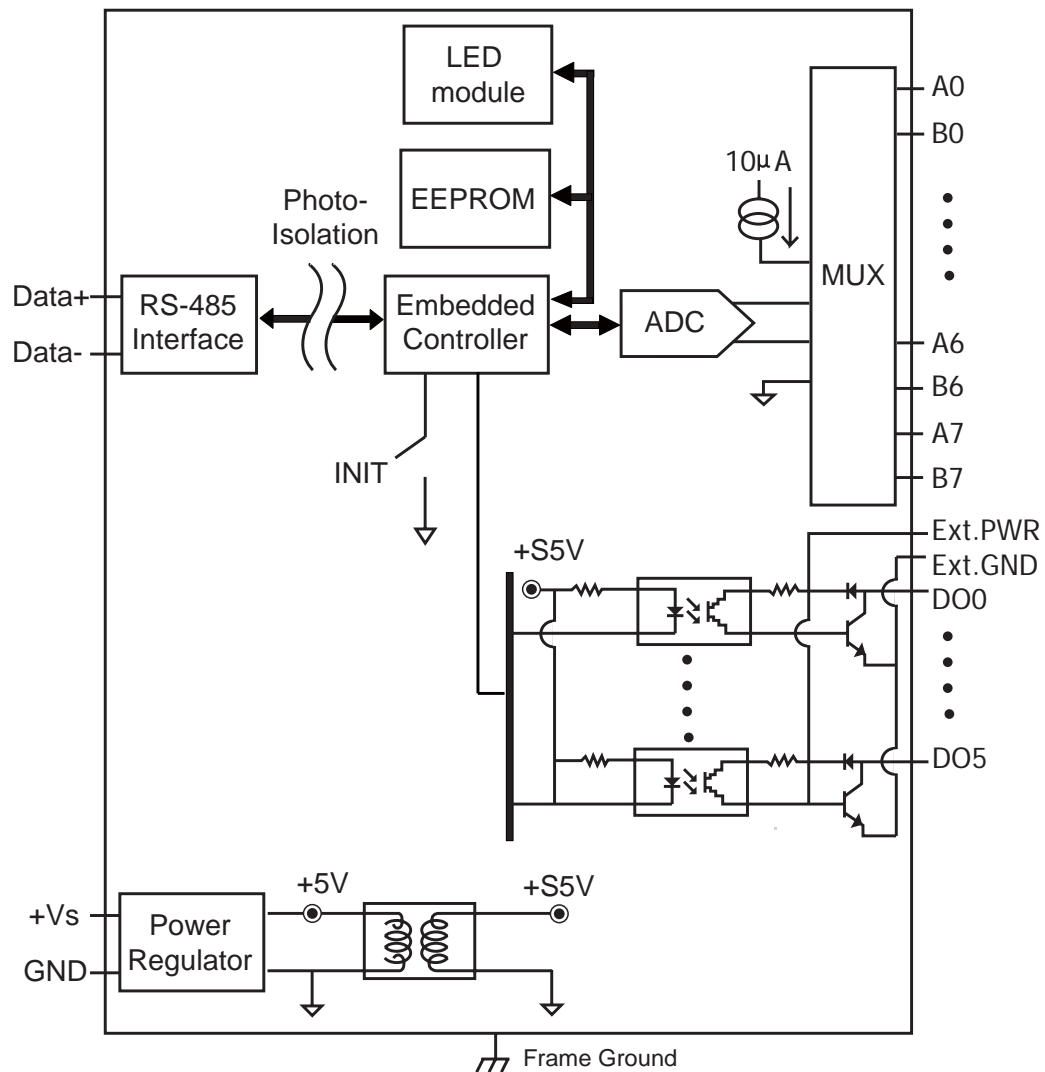
Pin Assignment

| | | | |
|-----------|---|----|----|
| A7 | 1 | 28 | B6 |
| B7 | | | A6 |
| EXT.PWR | | | B5 |
| EXT.GND | | | A5 |
| DO0 | | | B4 |
| DO1 | | | A4 |
| DO2 | | | B3 |
| DO3 | | | A3 |
| DO4 | | | B2 |
| DO5 | | | A2 |
| (Y)DATA+ | | | B1 |
| (G)DATA- | | | A1 |
| (R)+VS | | | B0 |
| (B)GND 14 | | 15 | A0 |

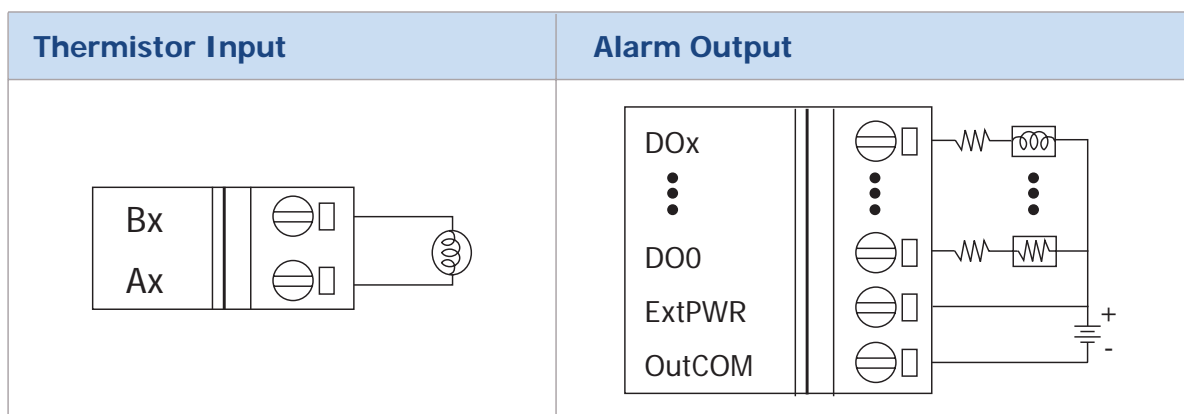
Ordering Information

| | |
|----------|--|
| M-7005-G | 8-channel Thermistor Input and 6 channel Alarm Output Module (Gray Cover) |
|----------|--|

Internal I/O Structure



Wire Connection



M-7000 AI Modules

Analog Input

Strain Gauge

2-channel Strain Gauge Input Module



Description

- Measure strain
- M-7016D : M-7016 with LED Display
- Strain Gauge Input Module
- Support Modbus and DCON protocols.

M-7016
M-7016D



Specifications

Analog Input

| | | | |
|------------------------|---|-----------------|---|
| Input channels | 2 | Resolution | 16-bit |
| Input type | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V, +/-20mA | Sampling rate | 10 Samples/ Second (1-channel mode) 2 Samples/ Second (2-channel mode) |
| Accuracy | +/- 0.05% FSR | Band width | 5.24 Hz |
| Zero drift | +/- 0.5μV/ °C | Span drift | 25ppm/°C |
| CMR @ 50/60Hz: | 150dB | NMR @ 50/60Hz: | 100dB |
| Overvoltage protection | 10V (P-P) | Input impedance | 20M Ohms |

Intra-module isolation, field to logic: 3000 VDC

Excitation Voltage Output

| | |
|-------------------|-----------------|
| Output channels | 1 |
| Logic level 0 | +1V Max |
| Max output load | 40mA |
| Accuracy | +/-0.05% of FSR |
| Input pulse width | +/-50ppm/ °C |
| Output impedance | 12 Ohms |
| Isolation | 3000 VDC |

Digital Input

| | |
|-------------------|-------------|
| Channels | 1 |
| Logic level 0 | +1V Max |
| Logic level 1 | 3.5V to 30V |
| Input frequency | 50Hz (max.) |
| Input pulse width | 1mS (min.) |

Power

| | |
|-------------------|--------------------------------|
| Power consumption | 2.4W (M-7016) / 3.0W (M-7016D) |
|-------------------|--------------------------------|

LED Display

1 LED as Power/ Communication indicator ; 4 1/2 digits (for M-7016D)

Digital Output

| | |
|-------------------|-----------------------------|
| Output channels | 4 |
| Output type | Sink, Open Collector to 30V |
| Output load | 30mA max per channel |
| Power dissipation | 300mW |



M-7000 AO Modules

Analog Output

2-channel 12-bit Analog Output Module with Channel to Channel Isolation



M-7022

Description

- Slew rate of AO channels are programmable
- Support Modbus and DCON protocols



Specifications

Analog Output

| | | | |
|---|---|---|---|
| Output channels | 2, Channel to channel isolation | Resolution | 12-bit |
| Output type | 0~20mA , 4~20mA and 0~10V | Span temperature coefficient | +/-25ppm/ °C |
| Zero drift | Current output : +/-0.2uA/°C Voltage output : +/-30uV/°C | Programmable output slope | 0.125 to 1024 mA/ second 0.0625 to 512 V/ second |
| Span drift | +/- 20ppm/°C | Current load resistance | External +24V : 1050 Ohms |
| Accuracy | +/- 0.1% of FSR | Read Back Accuracy | +/-1% of FSR |
| Intra-module isolation, Field to Logic : 3000 VDC | | Safe value (When the Host or communications fail) : Yes | |

LED Display

1 LED as Power/ Communication Indicator

Power Consumption

Power Consumption 3.0W

Ordering Information

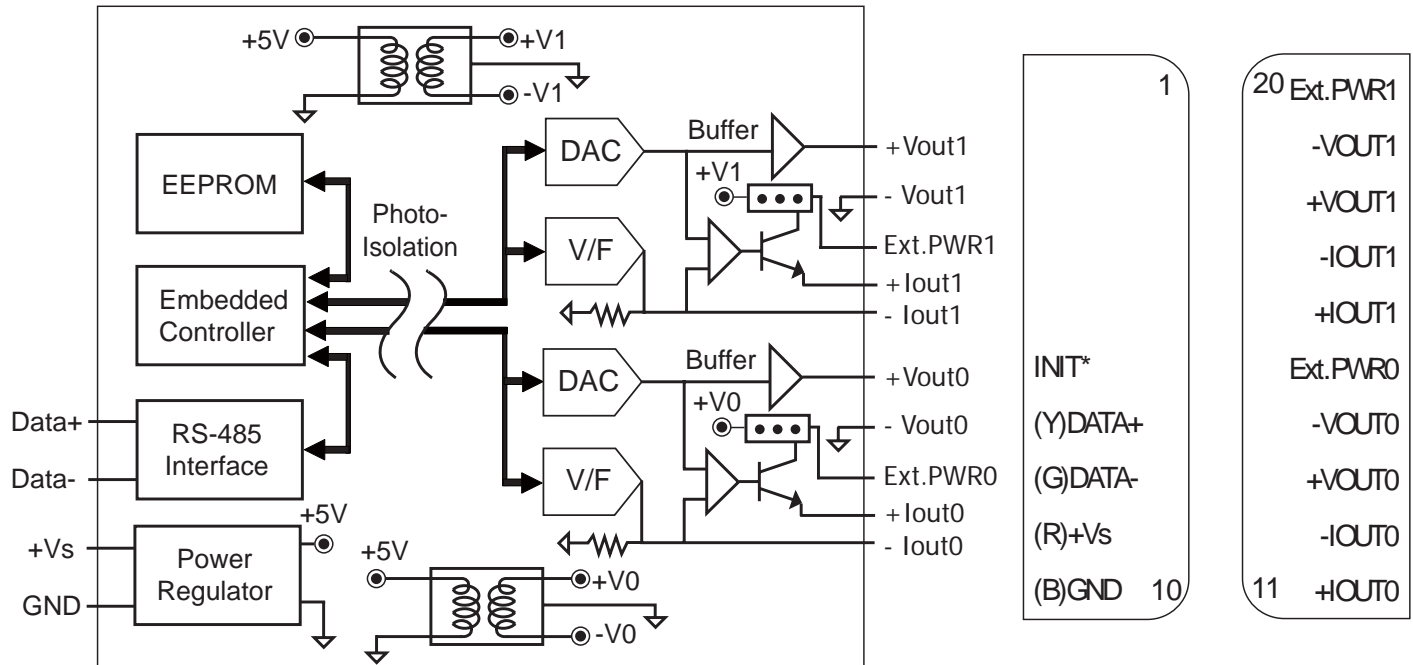
| | |
|-------------|--|
| M-7022-G CR | 2-channel 12-bit Analog Output Module (channel to channel isolation) (Gray Cover) (RoHS) |
|-------------|--|

Related Products

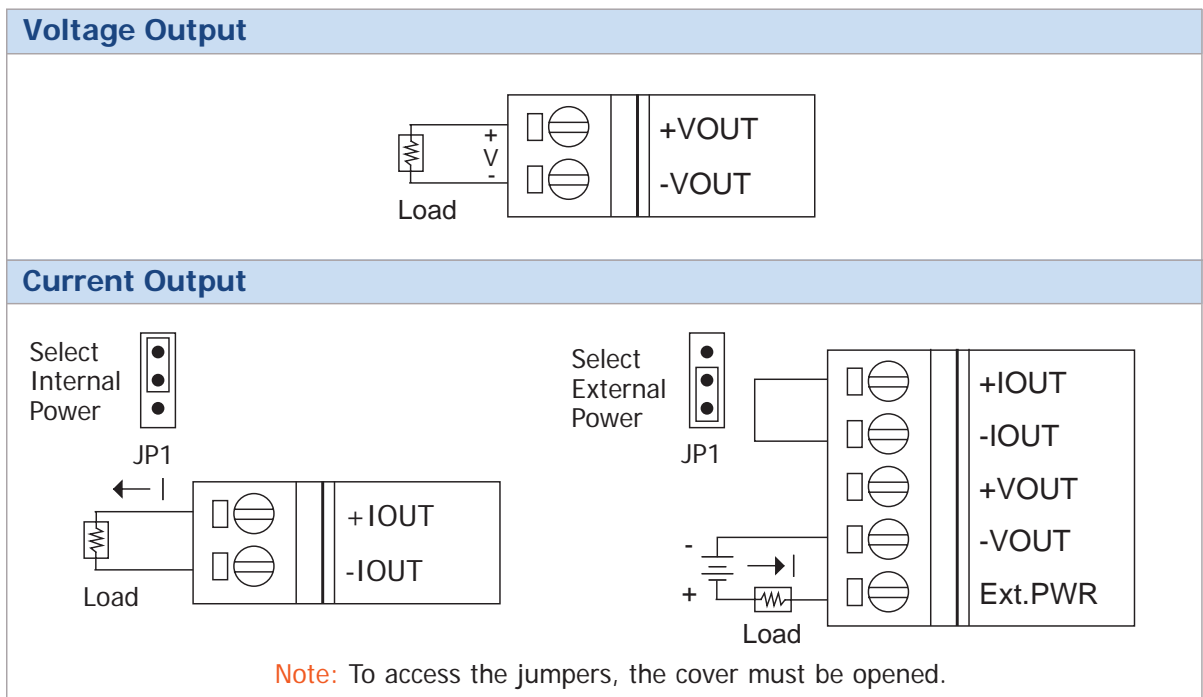
| | |
|----------------------|---|
| Converters | USB, RS-232, Fiber Optical to RS-485 Converters and Repeaters |
| Power Supply | 24V DC power supply |
| Relay Module | External relay modules for i-7000 DO module |
| Learning Kit | Starter learning kit |
| Application Books | Application books designed with our products |
| Data Logger Software | User friendly data logger software (free) |

Internal I/O Structure

Pin Assignment



Wire Connection





M-7000 AO Modules

Analog Output

4-channel 14-bit Analog Output Module 



M-7024

Description

- Slew rate of AO channels are programmable
- Support Modbus and DCON protocols.



Specifications

Analog Output

| | | | |
|---|---|---|--|
| Output channels | 4 | Resolution | 14-bit |
| Output type | 0~20mA, 4~20mA, 0~5V, +/-5V, 0~10V, +/-10V | | |
| Zero drift | Current output : +/-0.2uA/°C Voltage output : +/-30uV/°C | Programmable output slope | 0.125 to 2048 mA/ second 0.0625 to 1024 V/ second |
| Span drift | +/- 20ppm/°C | Current load resistance | External +24V : 1050 Ohms |
| Accuracy | +/- 0.1% of FSR | Span temperature coefficient | +/-20ppm/ °C |
| Power-on preset value : Yes | | Intra-module isolation, Field to Logic : 3000 VDC | |
| LED Display | | Power Consumption | |
| 1 LED as Power/ Communication Indicator | | Power Consumption | 2.4W |

Ordering Information

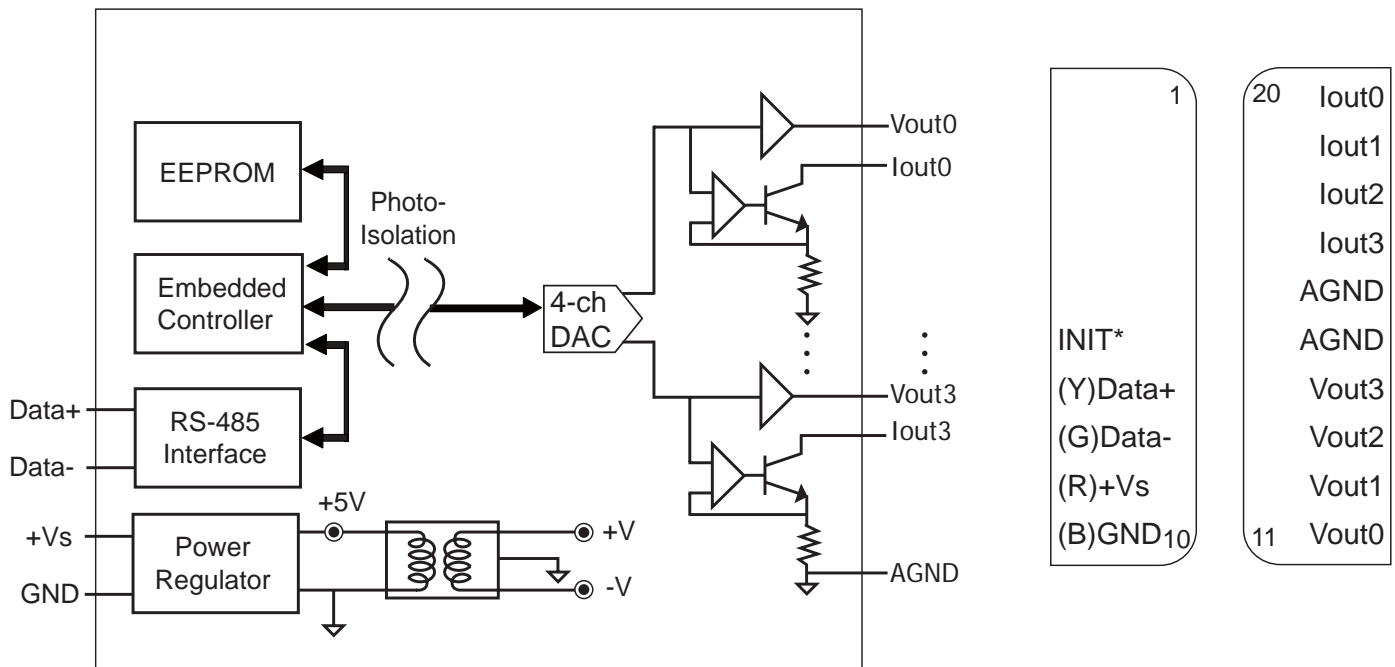
| | |
|-------------|---|
| M-7024-G CR | 4-channel 14-bit Analog Output Module (Gray Cover) (RoHS) |
|-------------|---|

Related Products

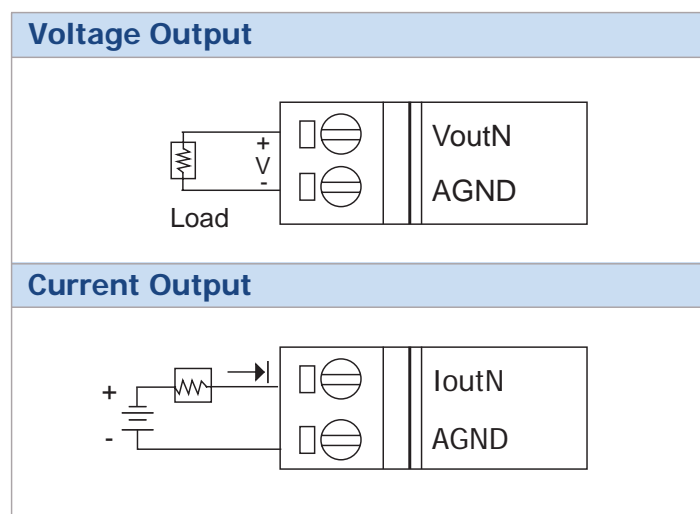
| | |
|----------------------|---|
| Converters | USB, RS-232, Fiber Optical to RS-485 Converters and Repeaters |
| Power Supply | 24V DC power supply |
| Relay Module | External relay modules for i-7000 DO module |
| Learning Kit | Starter learning kit |
| Application Books | Application books designed with our products |
| Data Logger Software | User friendly data logger software (free) |

Internal I/O Structure

Pin Assignment



Wire Connection



M-7000 DI Modules



M-7041 M-7041D

DC Digital Input

14-channel Isolated Digital Input
Module with 16-bit Counters



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- M-7041D : M-7041 with LED Display
- Support Modbus and DCON protocols.



Specifications

| ■ Digital Input | |
|--|---|
| Input channels | 14 |
| Input type | Sink or Source, Isolated channel with common power or ground |
| Digital input level | Off Voltage Level : +1V max. On Voltage Level : +4V to +30V |
| Input impedance | 3K Ohms, 0.5W |
| Counters | channels : 14 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |
| Isolation voltage | 3750V rms |
| ■ Power | |
| Power consumption | 0.2W (M-7041) / 0.9 W (M-7041D) |
| ■ LED Display | |
| 1 LED as Power/ Communication indicator 14 LEDs as Digital Input indicators (for M-7041D) | |

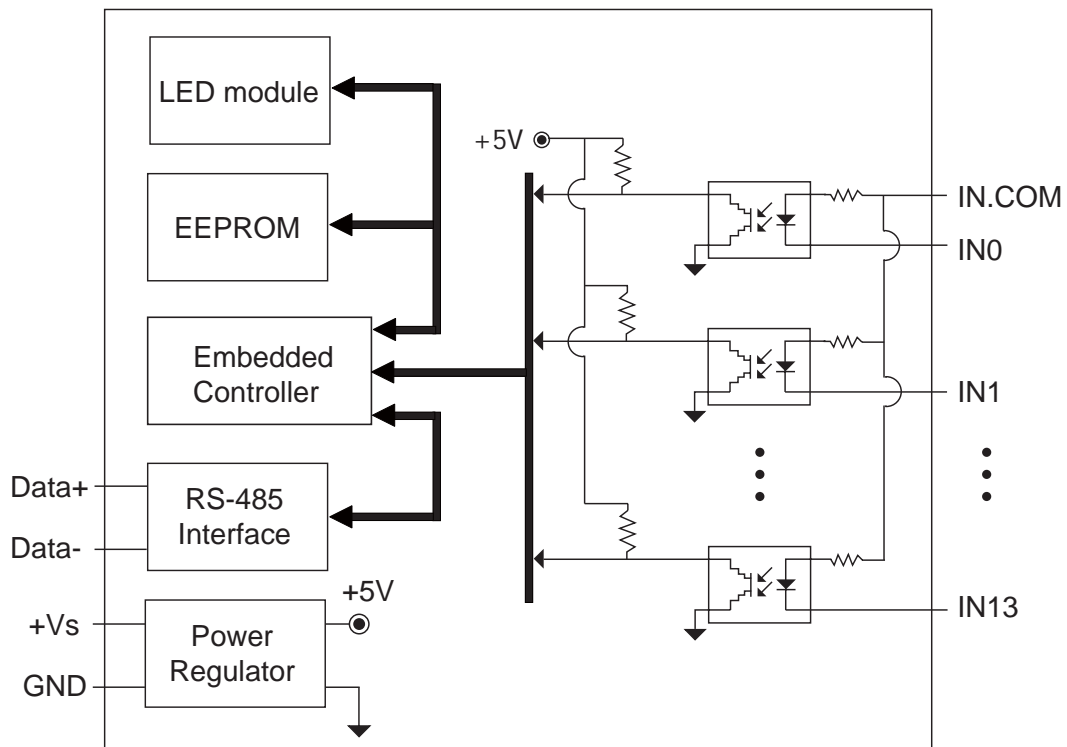
Pin Assignment

| | | | |
|-----------|---|----|-----|
| IN 10 | 1 | 20 | IN9 |
| IN 11 | | | IN8 |
| IN 12 | | | IN7 |
| IN 13 | | | IN6 |
| IN.COM | | | IN5 |
| INIT* | | | IN4 |
| (Y)DATA+ | | | IN3 |
| (G)DATA- | | | IN2 |
| (R)+Vs | | | IN1 |
| (B)GND 10 | | 11 | IN0 |

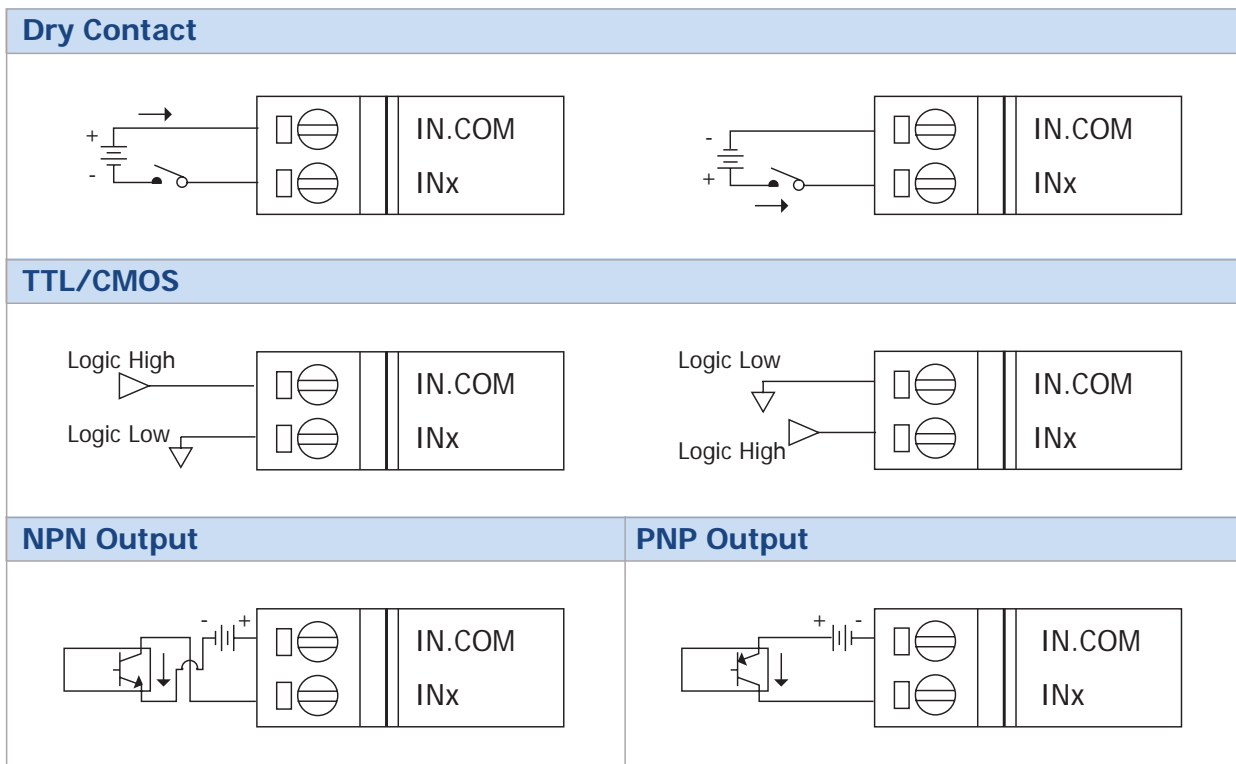
Ordering Information

| | |
|------------|--|
| M-7041 CR | 14-channel Isolated Digital Input Module (RoHS) |
| M-7041D CR | 14-channel Isolated Digital Input Module with LED Display (RoHS) |

Internal I/O Structure



Wire Connection



M-7000 DI Modules

DC Digital Input

16-channel Isolated Digital Input Module with 16-bit Counters



M-7051 M-7051D

Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- M-7051D : M-7051 with LED Display
- Support Modbus and DCON protocols.



Specifications

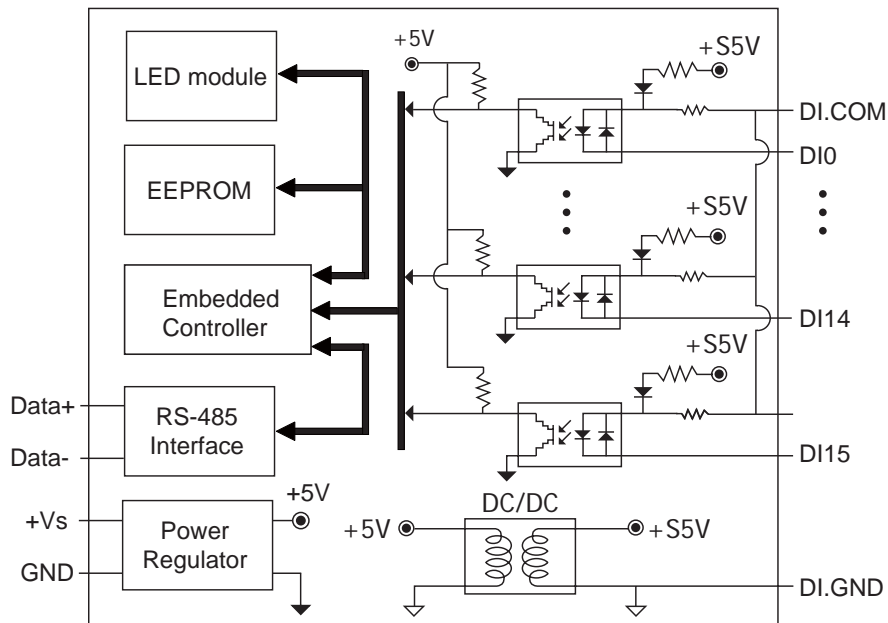
| ■ Digital Input | |
|--|--|
| Input channels | 16 |
| Input type | Dry Contact (Source), Wet Contact (Sink, Source) |
| Dry contact | Off Voltage Level : open On Voltage Level : close to GND |
| Effective distance | 500M max. for Dry Contact |
| Wet contact | Off Voltage Level : +4V max. On Voltage Level : +10V to +50V |
| Input impedance | 10K Ohms, 0.5W |
| Over-voltage protect | 70 VDC |
| Counters | channels : 16 Max. Counters : 16-bit (0~6,5535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |
| Optical isolation | 3750 Vrms |
| ■ Power | |
| Power consumption | 0.3W (M-7051) / 1.1W (M-7051D) |
| ■ LED Display | |
| 1 LED as Power/ Communication indicator 16 LEDs as Digital Input indicators (for M-7051D) | |

Ordering Information

| | |
|------------|--|
| M-7051 CR | 16-channel Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS) |
| M-7051D CR | 16-channel Isolated Digital Input Module with 16-bit Counters with LED Display (Gray Cover) (RoHS) |

Internal I/O Structure

Pin Assignment

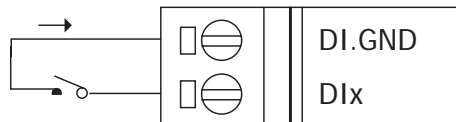


DI.GND 1
DI 11
DI 12
DI 13
DI 14
DI 15
DI.COM
(Y)DATA+
(G)DATA-
(Y)DATA+
(G)DATA-
(R)+VS
(B)GND 13

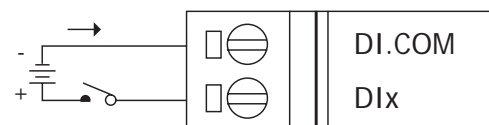
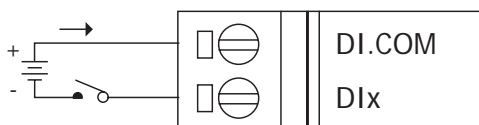
26 DI.GND
DI 10
DI 9
DI 8
DI 7
DI 6
DI.COM
DI 5
DI 4
DI 3
DI 2
DI 1
DI 0
14

Wire Connection

Dry Contact



Wet Contact



M-7000 DI Modules

DC Digital Input

8-channel Isolated Digital Input Module with 16-bit Counters



M-7052
M-7052D

Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- M-7052D : M-7052 with LED Display
- Support Modbus and DCON protocols.



Specifications

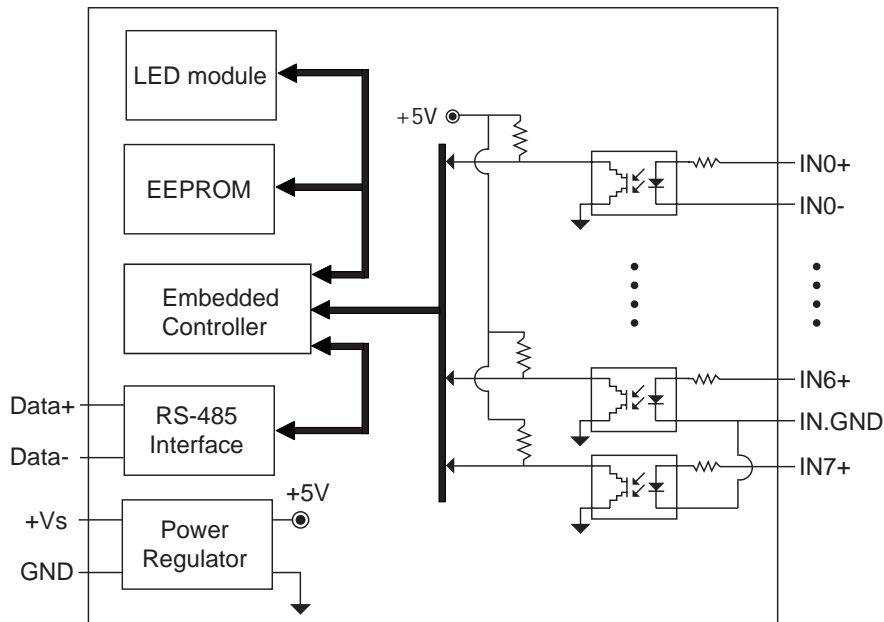
| Digital Input | |
|---|--|
| Input channels | 8 |
| Input type | Sink, Source, 6 fully independent channels and 2 common ground channels |
| Off voltage level | +1V Max |
| On voltage level | +4V to +30V |
| Input impedance | 3K Ohms, 0.5W |
| Counters | channels : 8 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |
| Photo-Isolation | 5000Vrms |
| Power | |
| Power consumption | 0.2W (M-7052) / 0.6W (M-7052D) |
| LED Display | |
| 1 LED as Power/ Communication indicator 8 LEDs as Digital Input indicators (for M-7052D) | |

Ordering Information

| | |
|--------------|---|
| M-7052-G CR | 8-channel Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS) |
| M-7052D-G CR | 8-channel Isolated Digital Input Module with 16-bit Counters with LED Display (Gray Cover) (RoHS) |

Internal I/O Structure

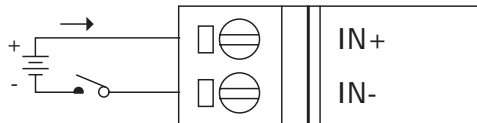
Pin Assignment



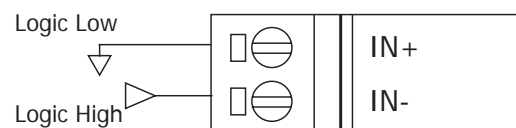
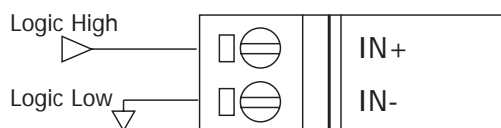
| | | | |
|----------|----|----|------|
| IN5+ | 1 | 20 | IN4- |
| IN5- | | | IN4+ |
| IN6+ | | | IN3- |
| IN.GND | | | IN3+ |
| IN7+ | | | IN2- |
| INIT* | | | IN2+ |
| (Y)DATA+ | | | IN1- |
| (G)DATA- | | | IN1+ |
| (R)+Vs | | | IN0- |
| (B)GND | 10 | 11 | IN0+ |

Wire Connection

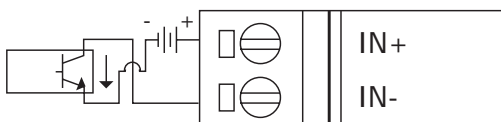
Wet Contact



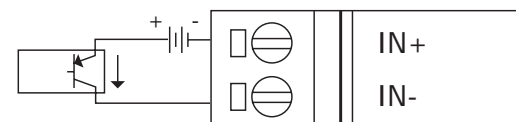
TTL/CMOS



NPN Output



PNP Output





M-7000 DI Modules

DC Digital Input

16-channel Non-Isolated Digital Input Module with 16-bit Counters



M-7053 M-7053D

Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- M-7053D : M-7053 with LED Display
- Support Modbus and DCON protocols



Specifications

| Digital Input | |
|--|---|
| Input channels | 16 |
| Input type | Dry Contact, Source |
| Off level | Close to GND |
| On level | Open |
| Effective distance | 500m max. |
| Counters | channels : 16 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms |
| Power | |
| Power consumption | 0.6W (M-7053)/ 1.4W (M-7053D) |
| LED Display | |
| 1 LED as Power/ Communication indicator 16 LEDs as Digital Input indicators (for M-7053D) | |

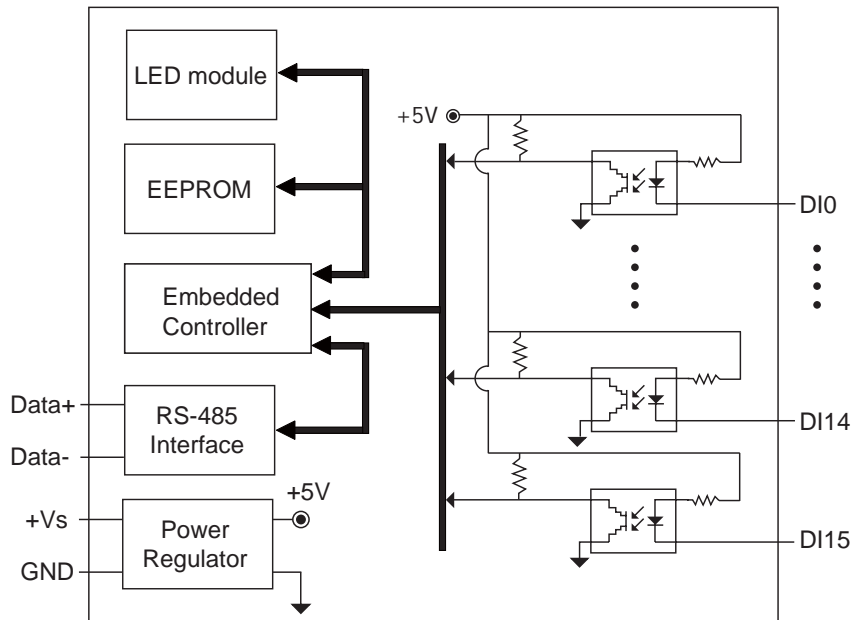
Pin Assignment

| | | | |
|-----------|---|----|------|
| DI 10 | 1 | 20 | DI 9 |
| DI 11 | | | DI 8 |
| DI 12 | | | DI 7 |
| DI 13 | | | DI 6 |
| DI 14 | | | DI 5 |
| DI 15 | | | DI 4 |
| (Y)DATA+ | | | DI 3 |
| (G)DATA- | | | DI 2 |
| (R)+Vs | | | DI 1 |
| (B)GND 10 | | 11 | DI 0 |

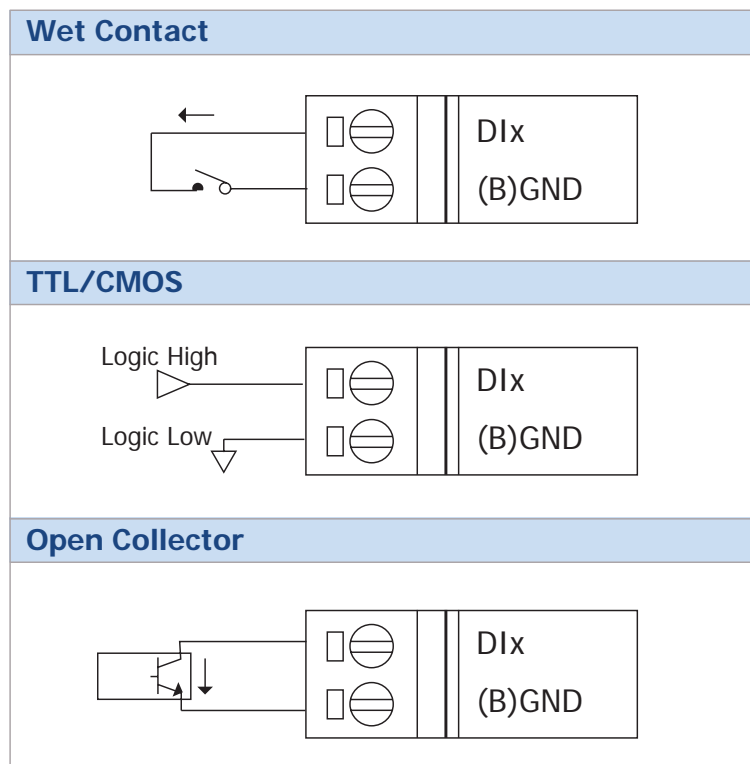
Ordering Information

| | |
|--------------|--|
| M-7053-G CR | 16-channel Non-Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS) |
| M-7053D-G CR | 16-channel Non-Isolated Digital Input Module with 16-bit Counters with LED Display (Gray Cover) (RoHS) |

Internal I/O Structure



Wire Connection



M-7000 DO Modules

DC Digital Output

16-channel Source Type **Isolated** Digital Output Module



Description

- DC Output Module
- Support Modbus and DCON protocols.
- Support Short-Circuit Protection

M-7045
M-7045D



Specifications

Digital Output

| | |
|--------------------------|---|
| Output channels | 16 |
| Output type | Isolated Open Source |
| Output voltage | +10 ~ +40V max. |
| Output current | 650 mA per channel, Direct drive power relay module |
| Short circuit protection | Yes |
| Isolation voltage | 3750Vrms |

Power

| | |
|-------------------|--------------------------------|
| Power consumption | 1.0W (M-7045) / 1.8W (M-7045D) |
|-------------------|--------------------------------|

LED Display

1 LED as Power/ Communication indicator
16 LEDs as Digital Output indicators (for M-7045D)

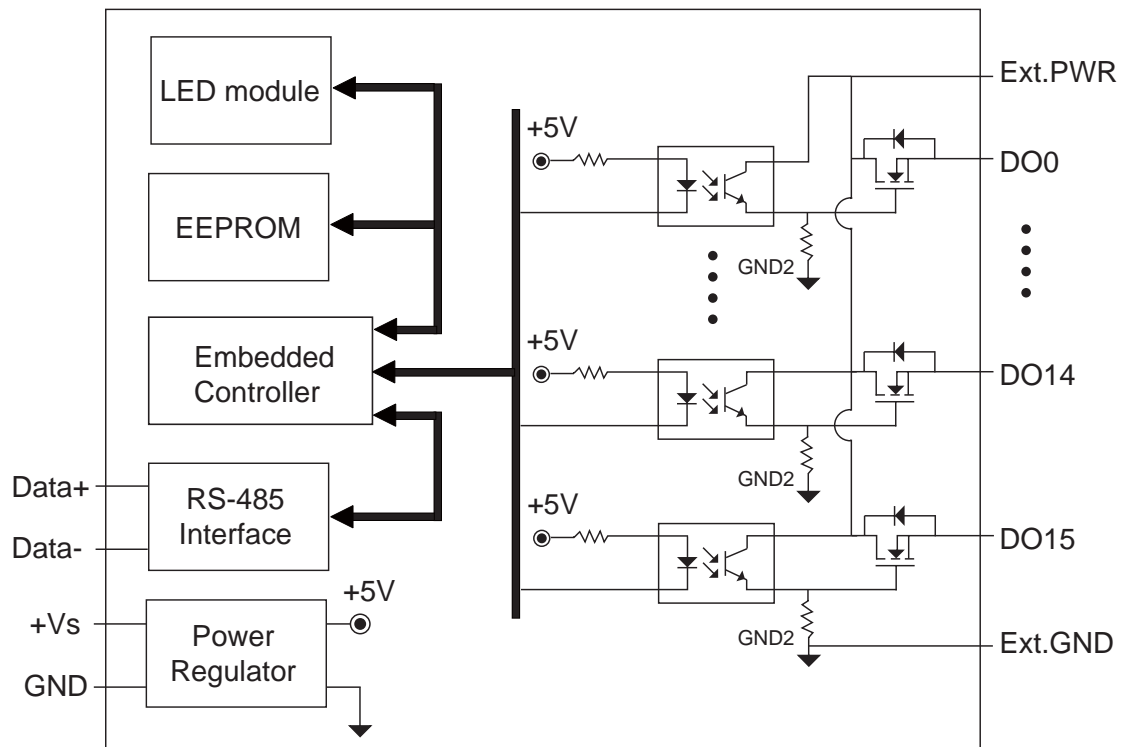
Pin Assignment

| | | | |
|----------|----|----|------|
| DO13 | 1 | 26 | DO12 |
| DO14 | | | DO11 |
| DO15 | | | DO10 |
| Ext.PWR | | | DO9 |
| Ext.GND | | | DO8 |
| (Y)DATA+ | | | DO7 |
| (G)DATA- | | | DO6 |
| (R)+Vs | | | DO5 |
| (B)GND | | | DO4 |
| (Y)DATA+ | | | DO3 |
| (G)DATA- | | | DO2 |
| (R)+VS | | | DO1 |
| (B)GND | 13 | 14 | DO0 |

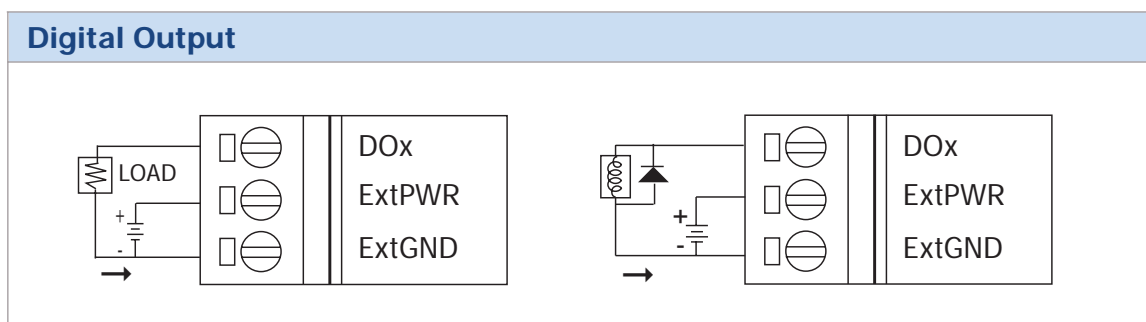
Ordering Information

| | |
|-----------|---|
| M-7045-G | 16-channel Isolated Digital Output Module (Gray Cover) |
| M-7045D-G | 16-channel Isolated Digital Output Module with LED display (Gray Cover) |

Internal I/O Structure



Wire Connection





M-7000 DI/DO Modules

DC Digital Input and Output

7-channel Sink Type Non-Isolated Digital Input & 8-channel Sink Type Non-Isolated Digital Output Module with 16-bit Counters



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- Support Modbus and DCON protocols

M-7050
M-7050D



Specifications

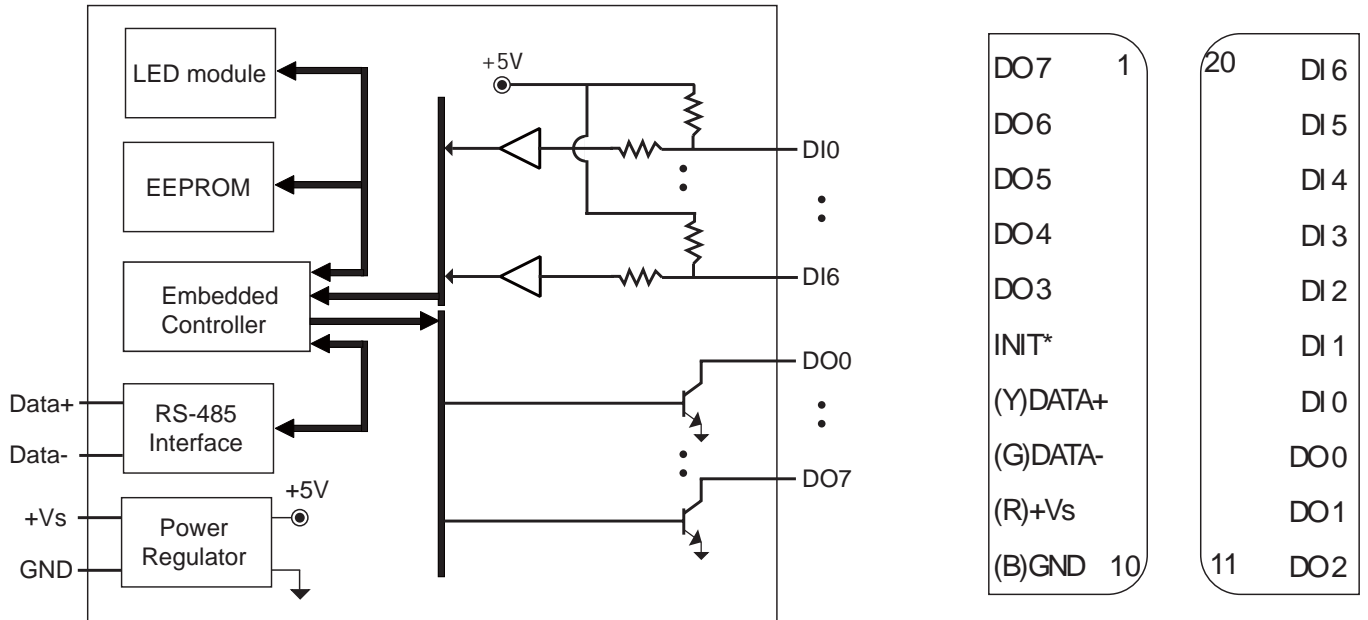
| Digital Input | | Digital Output | |
|-------------------|--|-------------------|--|
| Input channels | 7 | Output channels | 8 |
| Input type | Sink, non-isolated channel with common ground | Output type | NPN, Sink, Open collector |
| Off voltage level | +1V Max | Output voltage | 30V max. |
| On voltage level | +4V to +30V | Output current | 30mA max. |
| Input impedance | 10K Ohms, 0.3W | Power | |
| Counters | channels : 7 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms | Power consumption | 0.4W (M-7050) / 1.2W (M-7050D) |
| | | LED Display | 1 LED as Power/ Communication indicator 7 LEDs as Digital Input indicators and 8 LEDs as Digital Output indicators (for M-7050D) |

Ordering Information

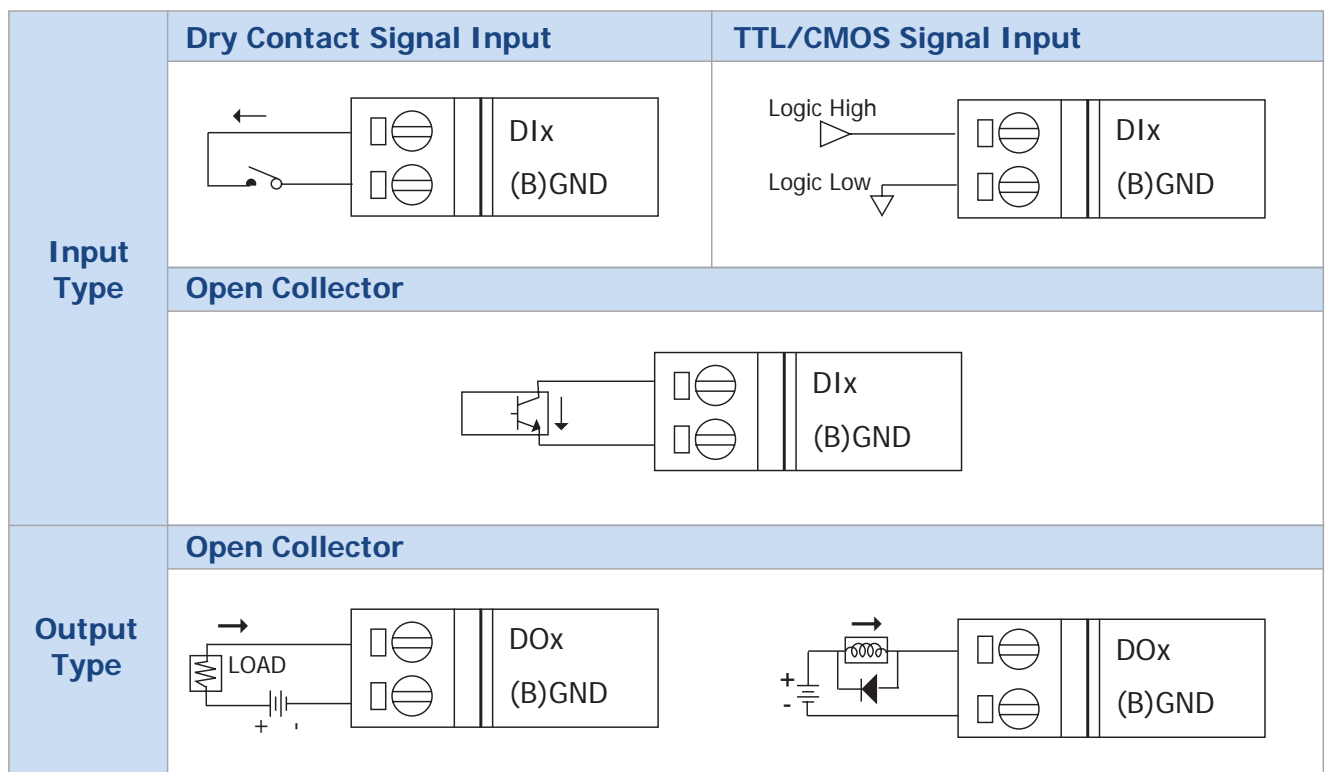
| | |
|--------------|--|
| M-7050-G CR | 7-channel Sink Type Non-Isolated Digital Input and 8-channel Sink Type Non-Isolated Digital Output Module with 16-bit Counters (Gray Cover) (RoHS) |
| M-7050D-G CR | M-7050-G CR with LED Display |

Internal I/O Structure

Pin Assignment



Wire Connection



M-7000 DI/DO Modules

DC Digital Input and Output

8-channel Isolated Digital Input and
8-channel Isolated Digital Output
Module with 16-bit Counters



Description

- DI channels can be used to get status and low speed (100Hz Max.) counts
- Support Modbus and DCON protocols.

M-7055
M-7055D



Specifications

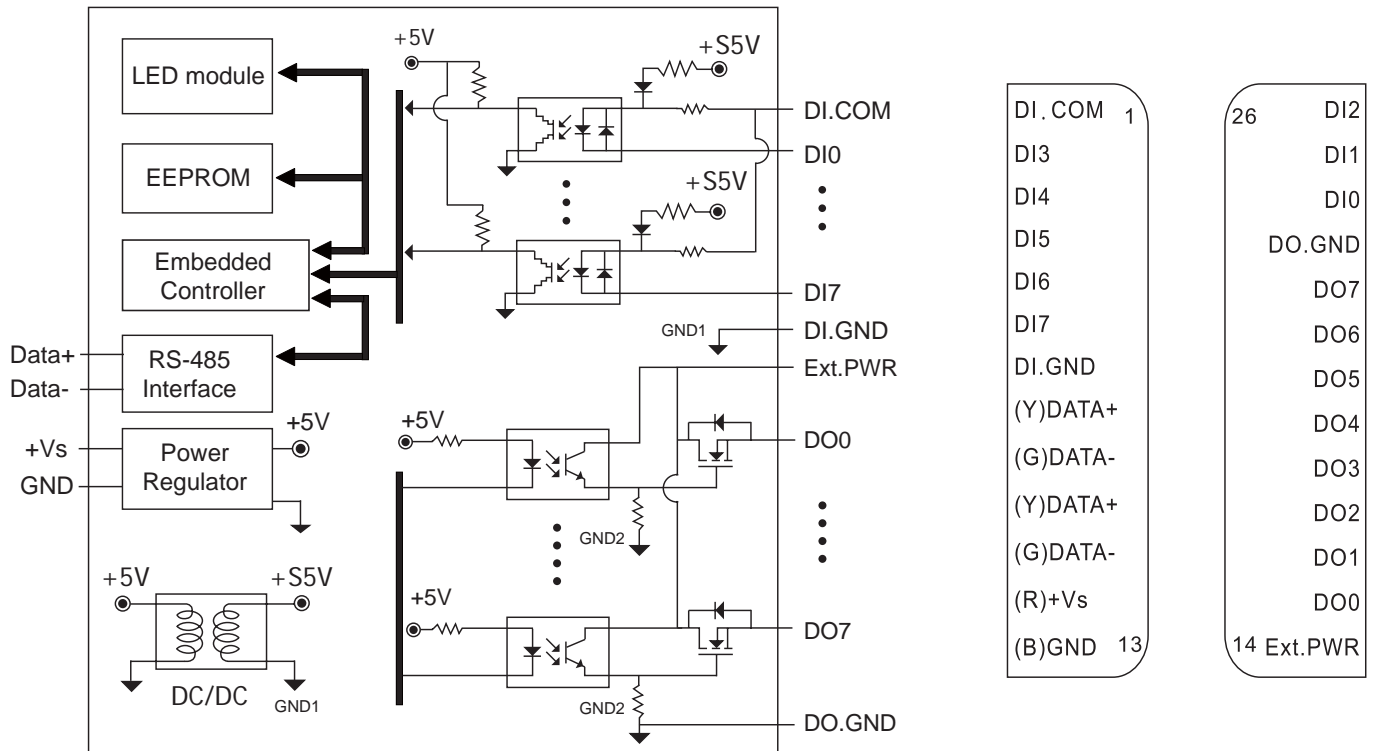
| ■ Digital Input | | ■ Digital Output | |
|---|--|--------------------------|---|
| Input channels | 8 | Output channels | 8 |
| Input type | Dry Contact: Source, Wet Contact: Sink or Source | Output type | Source, Open Collector |
| Dry contact | Off voltage level : Open On voltage level : Close to GND | Output voltage | 10 to 40V max. |
| Wet contact | Off voltage level : +4V max. On voltage level : +10V to +50V | Output current | 650mA per channel, Direct drive power relay module |
| Input impedance | 10K Ohms, 0.5W | Short circuit protection | Yes |
| Photo-Isolation | 3750Vdc | Photo-Isolation | 3750Vdc |
| Counters | channels : 8 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms | ■ Power | |
| ■ LED Display | | Power consumption | 0.8W (M-7055) / 1.6W (M-7055D) |
| 1 LED as Power/ Communication indicator 8 LEDs as Digital Input indicators and 8 LEDs as Digital Output indicators (for M-7055D) | | | |

Ordering Information

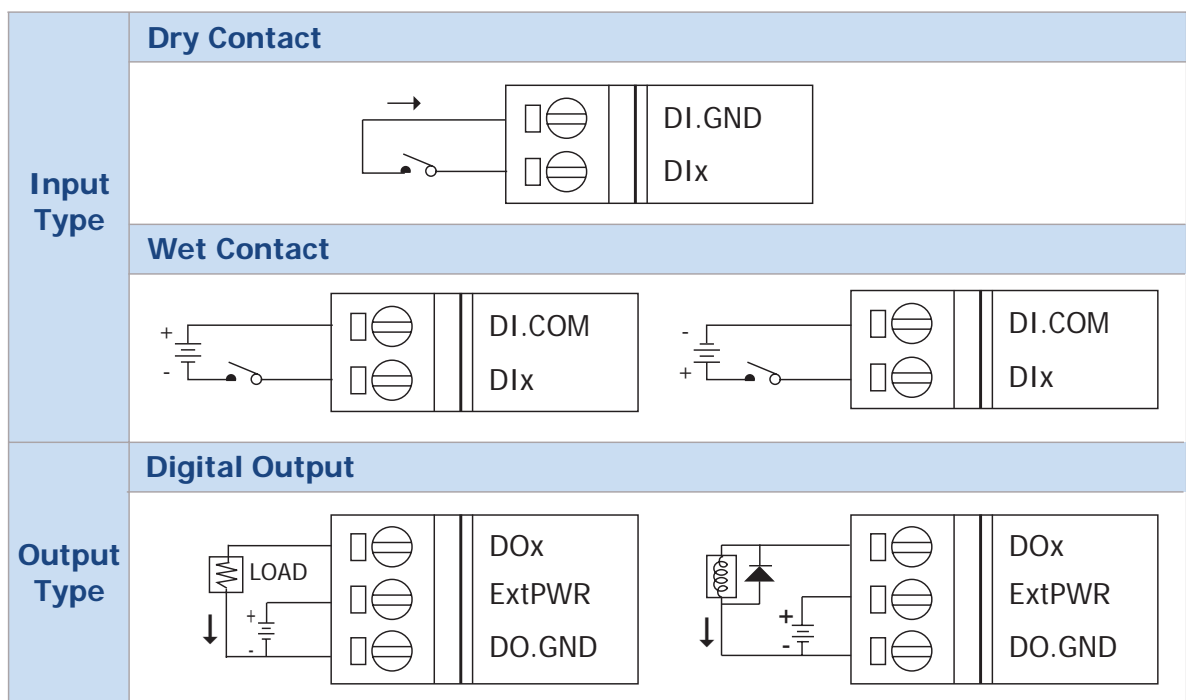
| | |
|--------------|--|
| M-7055-G CR | 8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module with 16-bit Counters (Gray Cover) (RoHS) |
| M-7055D-G CR | M-7055-G CR with LED Display |

Internal I/O Structure

Pin Assignment



Wire Connection



M-7000 Modules

Power Relay Output

4-channel Isolated Digital Input and 4-channel Relay Output Module with 16-bit Counters



M-7060
M-7060D

Description

- Traditional Relay, limited life time is
Mechanical: 20×10^6 OPS
Electrical: 100×10^3 Full Load
- Support Modbus and DCON protocols.



Specifications

| Digital Input | | Relay Output | |
|--|--|--------------------------|---|
| Input channels | 4 | Output channels | 4 |
| Input type | Sink or Source | Relay type | Form A x2, Form C x2 |
| Off voltage level | +1V Max | Contact rating | AC: 125V @0.6A; 250V @0.3A DC: 30V @2A; 110V @0.6A |
| On voltage level | +4V to +30V | Operating time (typical) | 3ms |
| Input impedance | 3K Ohms, 0.5W | Release time (typical) | 2ms |
| Counters | channels : 4 Max. Counters : 16-bit (65535) Max. Input Frequency : 100Hz Min. Pulse Width : 5ms | Total switching time | 10ms |
| | | Surge strength | 500VAC (50/60Hz) |
| | | Insulation resistance | 1000MW min. at 500Vdc |
| LED Display | | Power | |
| 1 LED as Power/ Communication indicator 4 LEDs as Digital Input indicators and 4 LEDs as Relay Output indicators (for M-7060D) | | Input voltage range | 10~30VDC |
| | | Power consumption | 1.3 W (max.) (M-7060) / 1.9 W (max.) (M-7060D) |

Ordering Information

| | |
|--------------|--|
| M-7060-G CR | 4-channel Isolated Digital Input and 4-channel Relay Output Module with 16-bit Counters (RoHS) |
| M-7060D-G CR | M-7060-G CR with LED Display |

Pin Assignment



M-7000 Modules

Power Relay Output

7-channels Relay Output Module



M-7067 M-7067D

Description

- Traditional Relay, limited life time is
Mechanical: 20×10^6 OPS
Electrical: 100×10^3 Full Load
- Support Modbus and DCON protocols.



Specifications

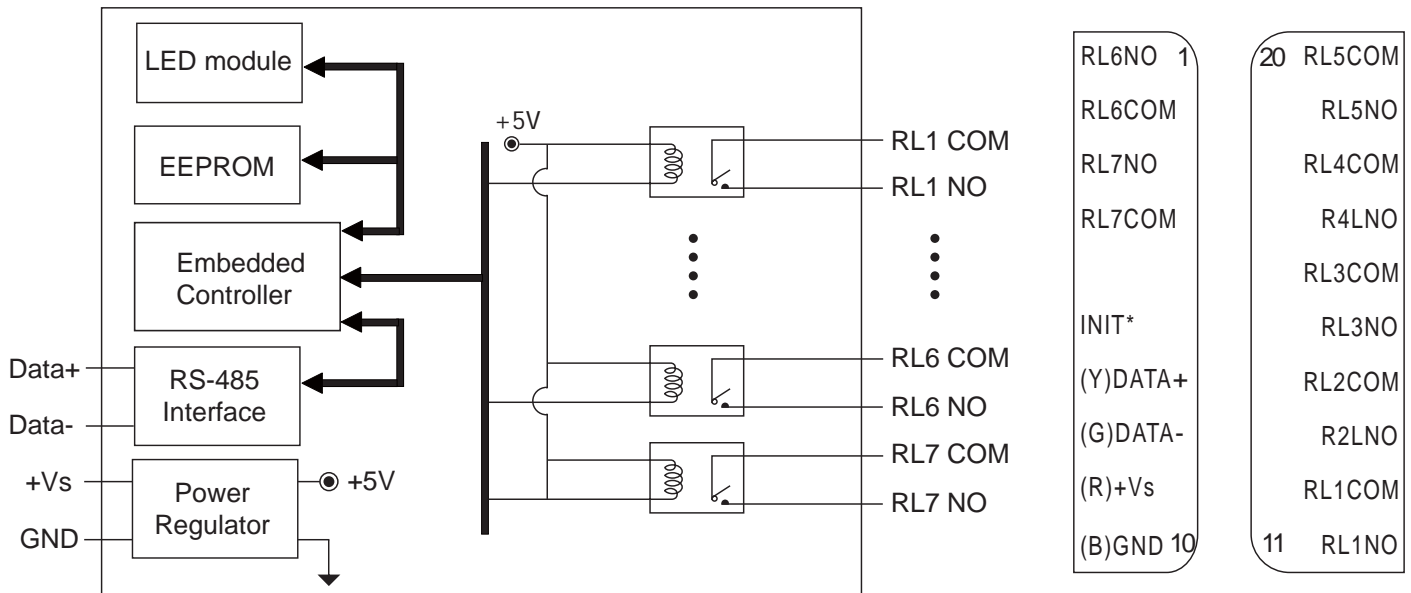
| Relay Output | |
|--|---|
| Output channels | 7 |
| Relay type | Form "A" relay SPST (N.O.) |
| Contact rating | AC: 120V@0.5A DC: 24V @1A |
| Operating time (typical) | 5ms |
| Release time (typical) | 2ms |
| Surge strength | 1,500VAC |
| Life time | Mechanical : 20×10^6 OPS Electrical : 100×10^3 Full Load |
| Power | |
| Power consumption | 1.5W (max.) (M-7067) / 2.2W (max.) (M-7067D) |
| LED Display | |
| 1 LED as Power/ Communication indicator 7 LEDs as Relay Output indicators (for M-7067D) | |

Ordering Information

| | |
|--------------|--|
| M-7067-G CR | 7-channel Relay Output Module (Gray Cover) (RoHS) |
| M-7067D-G CR | 7-channel Relay Output Module with LED Display (Gray Cover) (RoHS) |

Internal I/O Structure

Pin Assignment



Wire Connection

| Output Type | When LED state is ON, The readback value is 1 | When LED state is OFF, The readback value is 0 |
|--------------|--|---|
| From A Relay | <p>Relay On</p> | <p>Relay Off</p> |

M-7000 Modules

Counter/Frequency

Counter/Frequency Input Module



M-7080,80B M-7080D, 80BD

Description

- Input signal range can be 1Hz to 100KHz
- Support Modbus and DCON protocols.
- M-7080B/BD: built-in virtual battery back up for counter value



Specifications

Counter Input

| | |
|---|--|
| Input channels | 2 independent 32-bit counters, counter 0&1 |
| Input type | Isolated or non-isolated |
| Isolation input level | Logic level 0: +1V max. Logic level 1: +3.5 to 30V |
| Non-isolated input level (programmable) | Logic level 0: 0 to +5V (default= 0.8V) Logic level 1: 0 to +5V (default= 2.4V) |
| Maximum count | 32bit (4,294,967,295) |
| Programmable digital noise filter | 2us to 65ms |
| Alarming | alarm on counter 0 or counter 0 & 1, programmable |
| Counter preset value | programmable |

Digital Output

| | |
|-----------------|------------------------|
| Output channels | 2 |
| Output type | Source, Open-Collector |
| Output voltage | 30V max. |
| Output current | 30mA max. |

Frequency Measurement

| | |
|-----------------|-----------------------------|
| Input frequency | 1Hz to 100KHz max. |
| Get time | 1.0 or 0.1sec, programmable |

Power

| | |
|-------------------|--|
| Power consumption | 2.0W (max.) (M-7080 / 7080B) , 2.2W (max.) (M-7080D / 7080BD) |
|-------------------|--|

LED Display

1 LED as Power/ Communication indicator
5-digit readout, Channel 0 or Channel 1 (for M-7080D / 7080BD)

Pin Assignment

| | | | |
|----------|-----------------|----|--------|
| IN0 | 1 | 20 | DO1/HI |
| GATE0 | | | DO0/LO |
| D.GND | (Non-isolation) | | IN0+ |
| IN1 | | | IN0- |
| GATE1 | | | GATE0+ |
| INIT* | | | GATE0- |
| (Y)DATA+ | | | IN1+ |
| (G)DATA- | | | IN1- |
| (R)+Vs | | | GATE1+ |
| (B)GND | 10 | 11 | GATE1- |

Ordering Information

M-7080-G CR

Counter / Frequency input module (RoHS)

M-7080D-G CR

M-7080-G CR with LED Display

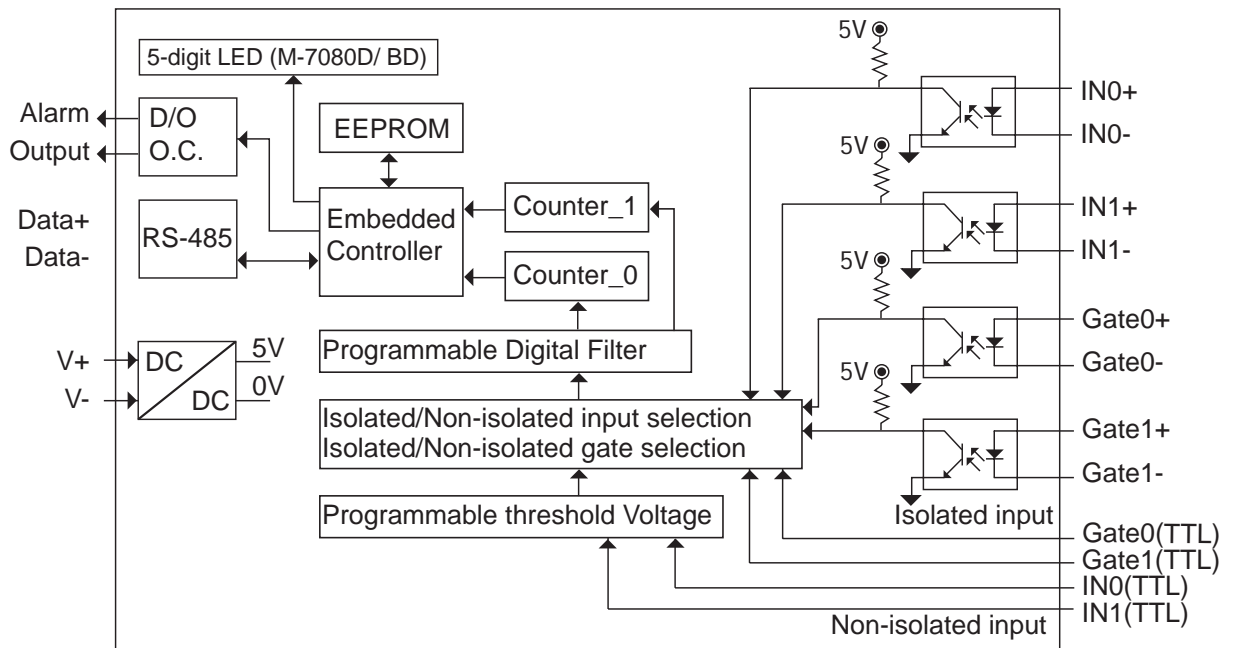
M-7080B-G

Battery backup counter/frequency input module















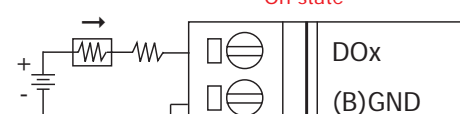
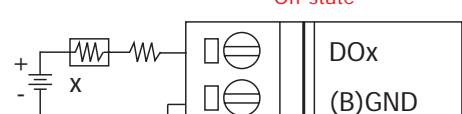
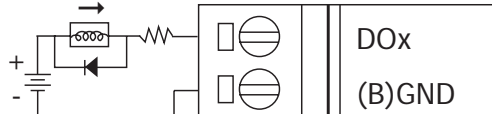
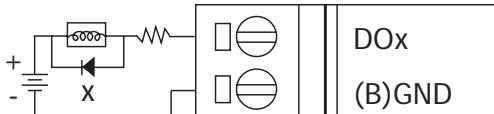
M-7080BD-G

M-7080B-G with LED Display

Internal I/O Structure



Wire Connection

| Input Type | Counter Type | |
|-----------------|--|---|
| | Isolation | Non-isolation |
| | Counter Input+  INx+ Counter Input-  INx- Gate Control+  GATEx+ Gate Control-  GATEx- | Counter Input  INx Gate Control  GATEx Ground  D.GND |
| | Frequency Type | |
| Output Type | Isolation | Non-isolation |
| | Frequency Input+  INx+ Frequency Input-  INx- Don't be used  GATEx+ Don't be used  GATEx- | Frequency Input+  INx Don't be used  GATEx Frequency Input-  D.GND |
| | Resistance Load | |
| | On state  | Off state  |
| Inductance Load | On state | Off state |
| | On state  | Off state  |

Introduction

There are two types of i-8000 I/O modules, Parallel (i-8K) and Serial (i-87K). The Parallel modules are High-speed modules and have to be installed in the Main Control Unit. The serial I/O modules can be installed in either the parallel or serial I/O expansion slots.



Parallel I/O Modules (i-8K series modules)

The communication interface is parallel bus. It can be plug in WinCon, LinCon and I-8000 controllers.

Features :

- High speed A/D : 100K samples/second
- High speed D/A : 30K from -10V to +10V
- High speed D/I & D/O; All digital I/O modules provide visual indication of status via LED indicators
- High speed stepping/ Servo motion control module
- High speed encoder module
- High speed performance Counter/ Frequency modules
- High speed multi-channel RS-232/ RS-422/ RS-485 modules
- Printer interface & X-Socket interface module

Comparison Table of i-8K & i-87K Modules

| Items | i-8K Series | i-87K Series |
|--|--------------|--------------|
| Microprocessor | No | Yes (8051) |
| Communication interface | Parallel bus | Serial bus |
| Communication speed | Fast | Slow |
| DI latched function | No | Yes |
| Counter input (for digital input module) | No | Yes (100Hz) |
| Host watchdog | No | Yes |
| Module watchdog | No | Yes |
| Programmable slew-rate for AO module | No | Yes |

Note: For industrial applications, we recommend to choose i-87K modules.

Dimensions : 31mm x 67mm x 114mm (W x D x H)

■ Analog Input

Page 3-7~10

| Modules | | i-8017H | i-8017HS |
|--------------|---|---|---|
| Analog Input | Resolution | 14-bit | 14-bit |
| | Input channel | 8 diff. | 8 diff. or 16-single |
| | Sampling rate (total) | 100KHz | 100KHz |
| | Voltage & current Input * Need external 125Ω resistors | +/-10V, +/-5V, +/-2.5V +/-1.25V, +/-20mA (*) | +/-10V, +/-5V, +/-2.5V +/-1.25V, +/-20mA (*) |
| | Isolation voltage | 3000V | 3000V |
| | Over voltage protection | +/-35V | +/-35V |
| | Power consumption | 2W | 2W |

■ Analog Output

Page 3-11~12

| Modules | | i-8024 |
|---------------|--------------------------|------------------|
| Analog Output | Resolution | 14-bit |
| | Output channels | 4 |
| | Accuracy | ±0.1% of FSR |
| | Voltage & current output | +/-10V 0-20mA |
| | Isolation voltage | 3000V |
| | Voltage output driver | 5mA max |
| | Power consumption | 1.25W |

■ Digital IO

Page 3-13~20

| Modules | | i-8037 | i-8040 | i-8041 | i-8042 |
|--------------------------------|-------------------------|-----------------------------------|--------|--------|--------|
| Digital Input & Digital Output | Digital input channels | - | 32 | - | 16 |
| | Digital output channels | 16 open source isolation 3750V | - | 32 | 16 |
| | LED display | Yes | Yes | Yes | Yes |
| | Power consumption | 0.5W | 1.6W | 1.7W | 1.5W |

■ Digital IO

Page 3-21~30

| Modules | | i-8050 | i-8051 | i-8052 | i-8053 | i-8054 |
|--------------------------------|-------------------------|-----------------|--------|-------------------|--------------------|----------------------------------|
| Digital Input & Digital Output | Digital input channels | Can be up to 16 | 16 | 8 isolation 5000V | 16 isolation 3750V | 8 isolation 3750V |
| | Digital output channels | Can be up to 16 | - | - | - | 8 open collector isolation 3750V |
| | LED display | Yes | Yes | Yes | Yes | Yes |
| | Power consumption | 1.0W | 1.0W | 0.8W | 0.9W | 1.0W |

Page 3-31~38

| Modules | | i-8055 | i-8056 | i-8057 | i-8058 |
|--------------------------------|-------------------------|------------------|-------------------|-----------------------------------|--|
| Digital Input & Digital Output | Digital input channels | 8 | - | - | 8 open collector isolation 3750V AC/DC Max. 250V input |
| | Digital output channels | 8 open collector | 16 open collector | 16 open collector isolation 3750V | - |
| | LED display | Yes | Yes | Yes | Yes |
| | Power consumption | 0.5W | 0.7W | 1W | 0.8W |

Page 3-39~46

| Modules | | i-8060 | i-8063 | i-8064 | i-8065 |
|--------------------------------|-------------------------|----------|-------------------|--|--|
| Digital Input & Digital Output | Digital input channels | - | 4 isolation 3750V | - | - |
| | Digital output channels | 6 Form C | 4 Form C | 8 Channel Relay Form A AC 250V/5A, DC 30V/5A | 8 Channel SSR AC-type Relay Form A 24 to 265 Vrms @1.0Arms |
| | LED display | Yes | Yes | Yes | Yes |
| | Power consumption | 2.2W | 2.0W | 2.2W | 0.9W |

Page 3-47~53

| Modules | | i-8066 | i-8068 | i-8069 | i-8077 |
|--------------------------------|-------------------------|--|-------------------------------------|-----------------------------|---------------|
| Digital Input & Digital Output | Digital input channels | - | - | - | 8 (Simulator) |
| | Digital output channels | 8 Channel SSR DC-type Relay Form A DC: 3~30Vdc @1.0A | 8 Channel Relay Form A x4 Form C x4 | 8 Photo MOS Relay Form A x8 | 8 (Simulator) |
| | LED display | Yes | Yes | Yes | Yes |
| | Power consumption | 0.8W | 2.4W | 0.8W | 0.3W |

Counter/ Frequency

Page 3-54

| Modules | | i-8080 |
|---------------------------|-----------------------|--|
| Counter & Frequency input | Mode | 4 channels Up/Down Counter (Up/Down) 4 channels Dir/Pulse Counter(Bi-direction) 8 channels Up Counter 8 channels Frequency |
| | Input frequency | 0~450K Hz (Frequency mode) 450K Hz max (Counter mode) |
| | Input level | Isolated or TTL level |
| | Isolated input level | Logic Level 0 : +1V max Logic Level 1 : +4.5V to 30V |
| | TTL input level | Logic Level 0 : 0V to 0.8V Logic Level 1 : 2 to 5V |
| | Isolated voltage | 3750 Vrms |
| | Power consumption | 1W |
| | Minimum input current | 2mA (Isolated) |
| | EEPROM | 128 bytes |

Communication Module

Page 3-55~59

| Modules | i-8112 | i-8114 | i-8142 | i-8142i | i-8144 |
|-----------------------|-------------------|-------------------|------------------|-------------------|-------------------|
| Interface | RS-232 | RS-232 | RS-422/RS-485 | RS-422/RS-485 | RS-422/RS-485 |
| Port | 2 | 4 | 2 | 2 | 4 |
| Max. channels | 16 | 32 | 16 | 16 | 32 |
| Max. speed (K bps) | 115.2 | 115.2 | 115.2 | 115.2 | 115.2 |
| I/O controller | 16C550 | 16C550 | 16C550 | 16C550 | 16C550 |
| Isolation | - | - | - | 3000V | - |
| Microprocessor | - | - | - | - | - |
| Flash/SRAM (KB) | - | - | - | - | - |
| Surge protection | Yes | Yes | Yes | Yes | Yes |
| Self-tuner inside | - | - | Yes | Yes | Yes |
| Connectors | (10-pin) RJ45 x 2 | (10-pin) RJ45 x 4 | (8-pin) RJ45 x 2 | (10-pin) RJ45 x 2 | (10-pin) RJ45 x 4 |
| Vxcomm driver support | Yes | Yes | Yes | Yes | Yes |
| Power consumption | 0.75W | 0.9W | 1.6W | 2.4W | 1.9W |

Page 3-60

| Modules | Interface | Port | Communication speed | Communication distance | Cyclic Scan time | Wire cable | Power consumption |
|---------|-----------|------|---------------------|------------------------|-------------------------------------|----------------------------------|-------------------|
| i-8172 | FRnet | 2 | 250Kbps | 400m max | 128 input/128 output points@2.88 ms | (shielded) Twisted-pair cable | 1.25W Max. |



Selection Guide

i-8K Modules
Motion Control/ Memory Socket

❑ Motion Control

Page 3-61 ~ 63

| Modules | | i-8090-G | i-8091-G |
|----------------------|------------------|------------------------|-------------------|
| Encoder input | Axes | 2 | - |
| | Counter (bits) | 16 | - |
| | Input rate (pps) | 1M | - |
| | Signal | cw/ccw, pulse/dir, A/B | - |
| Command Pulse Output | Axes | - | 2 |
| | Speed (pps) | - | 1M |
| | Counter (bits) | - | 32 |
| | Signal | - | cw/ccw, pulse/dir |
| Daughter Board | | - | - |
| Isolation Voltage | | 2500Vrms | 2500Vrms |
| Power Consumption | | 3.4W | 3.9W |

❑ Memory Socket

Page 3-64

| Xsocket | |
|--|---------------------------------|
| S256 | 256K battery backup SRAM module |
| S512 | 512K battery backup SRAM module |
| The S256/S512 can provide 10,000 hours backup time | |



Will be available

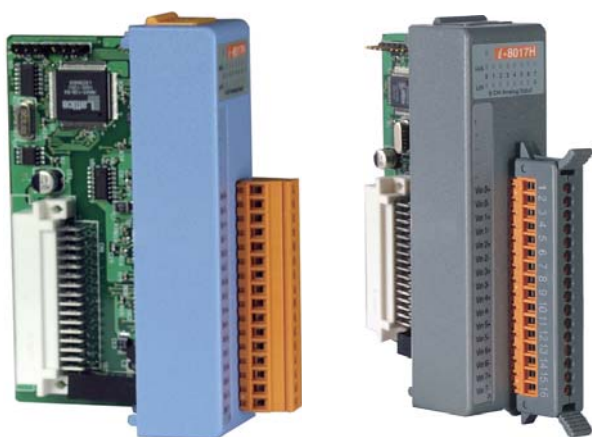
Communication Module

| Modules | i-8114W | i-8114iw | i-8144W | i-8144iW |
|-------------------|--------------------------|--------------------------|----------------|-----------------------------------|
| Interface | RS-232 | RS-232 | RS-485 | RS-422/RS-485 |
| Port | 4 | 4 | 4 | 4 |
| FIFO (Bytes) | 16 | 16 | 16 | 16 |
| Isolation | - | Yes | 3000V | 3000V |
| Self-tuner inside | - | - | Yes | Yes |
| Connector | DB-37 (9-wire RS-232) | DB-37 (9-wire RS-232) | Terminal Block | Terminal Block (4-wire RS-422) |
| Note | 9-wire | 3-wire | - | - |

i-8000 AI/AO Modules

AI Modules

14-bit 100K sampling rate 8-channel analog input module



i-8017H
i-8017H(G)

Description

- AI modules have high sampling rate from 1K to 100Ksps (depends on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware



Specifications

Analog Input

| | | | |
|-----------------|---|------------------------|---------------|
| Input channels | 8 | Input Bandwidth | 100K Hz |
| Input type | Differential | Resolution | 14-bit |
| Input impedance | 200K | Accuracy | ± 0.1% of FSR |
| Input range | ±10V, ±5V, ±2.5V, ±1.25V, ±20mA | Overvoltage protection | -35V ~ +35V |
| Sample rate | Single channel polling mode : 100 K sps Single channel interrupt mode : 50Ksps Channels scan mode: 16Ksps | Isolation voltage | 3000Vdc |

Power

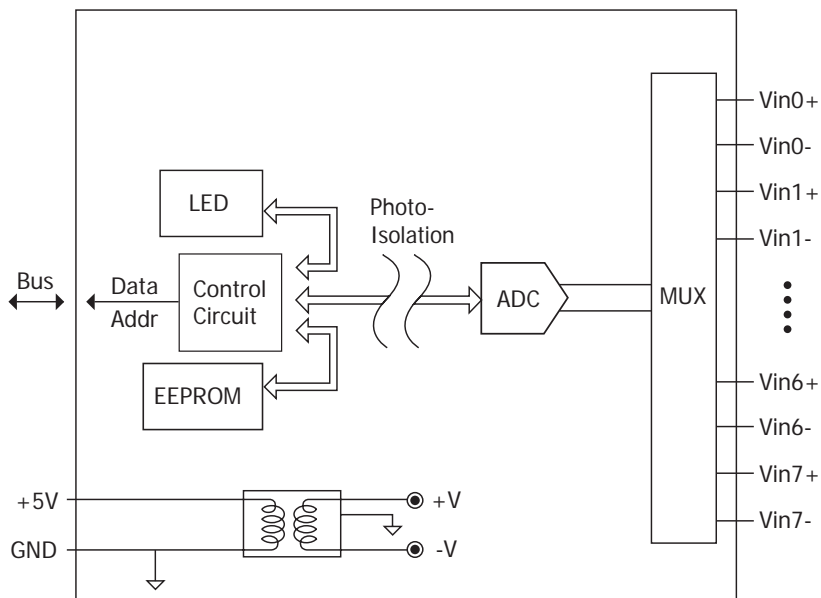
Power consumption 2W

Ordering Information

| | |
|--------------|---|
| i-8017H CR | 14-bit 100K sampling rate 8-channel analog input module (Blue Cover) (RoHS) |
| i-8017H-G CR | 14-bit 100K sampling rate 8-channel analog input module (Gray Cover) (RoHS) |

Internal I/O Structure

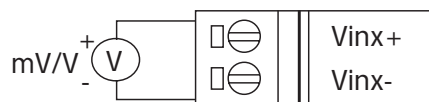
Pin Assignment



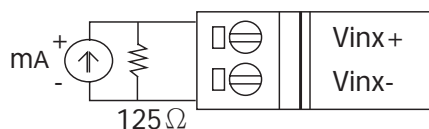
| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | Vin0+ |
| 02 | Vin0- |
| 03 | Vin1+ |
| 04 | Vin1- |
| 05 | Vin2+ |
| 06 | Vin2- |
| 07 | Vin3+ |
| 08 | Vin3- |
| 09 | Vin4+ |
| 10 | Vin4- |
| 11 | Vin5+ |
| 12 | Vin5- |
| 13 | Vin6+ |
| 14 | Vin6- |
| 15 | Vin7+ |
| 16 | Vin7- |

Wire Connection

Voltage Input Wiring



Current Input Wiring

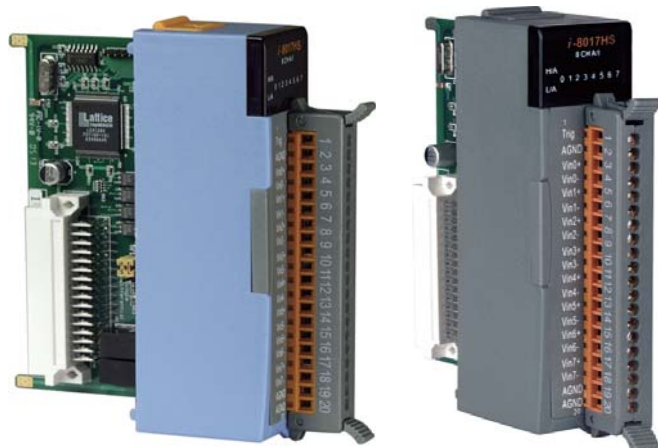


Note: When connecting to a current source, an optional external 125-Ohm resistor is required.

i-8000 AI/ AO Modules

AI Modules

14-bit 100K sampling rate
8/16-channel analog input module



i-8017HS i-8017HS(G)

Description

- AI modules have high sampling rate from 1K to 100Ksps (depends on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware



Specifications

Analog Input

| | |
|-------------------|---|
| Input channels | 8/ 16 ch |
| Input type | Differential / Single-ended |
| Input impedance | 200K |
| Input range | $\pm 10V$, $\pm 5V$, $\pm 2.5V$, $\pm 1.25V$, $\pm 20mA$ |
| Input bandwidth | 100K Hz |
| Resolution | 14-bit |
| Accuracy | $\pm 0.1\%$ of FSR |
| Isolation voltage | 3000Vdc |
| Sample rate | Single channel polling mode : 100 K sps Single channel interrupt mode : 50K sps Channels scan mode: 16K sps |

Power

| | |
|-------------------|----|
| Power consumption | 2W |
|-------------------|----|

Note :

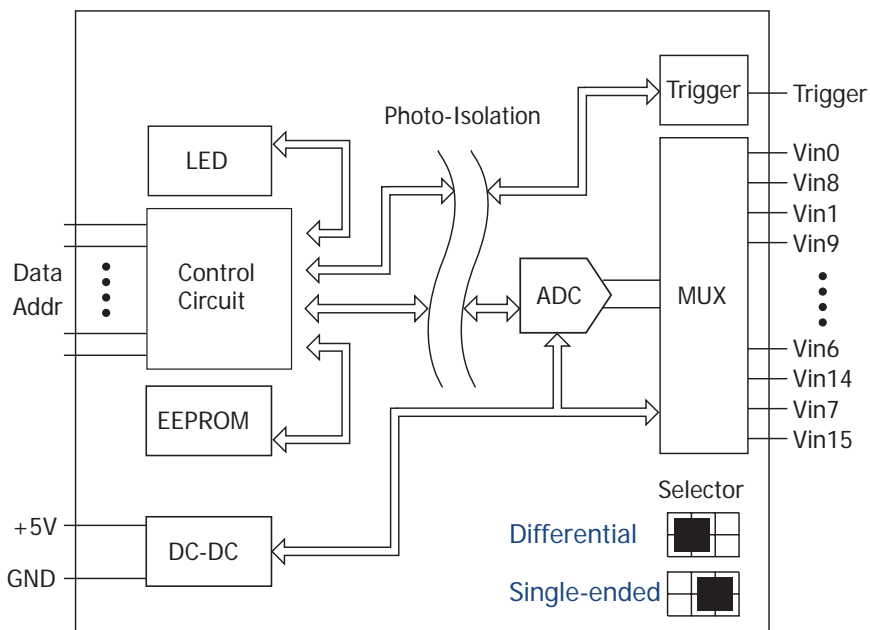
- The software is same as 8017H. Your old software can support both 8017H and 8017HS
- To support channel 7~15 of single-ended mode, the 8017H library must be updated to ver 1.0.4.
- The Trigger pin is used to accept external signal to trigger the A/D sampling. But the driver doesn't support this function yet.

Ordering Information

| | |
|---------------|---|
| i-8017HS CR | 14-bit 100K sampling rate 8/ 16-channel analog input module (RoHS) |
| i-8017HS-G CR | 14-bit 100K sampling rate 8/ 16-channel analog input module (RoHS) (Gray color) |

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name | |
|--------------|---------------------|--------------|
| | Differential | Single-ended |
| 01 | Trig | Trig |
| 02 | AGND | AGND |
| 03 | Vin0+ | Vin0 |
| 04 | Vin0- | Vin8 |
| 05 | Vin1+ | Vin1 |
| 06 | Vin1- | Vin9 |
| 07 | Vin2+ | Vin2 |
| 08 | Vin2- | Vin10 |
| 09 | Vin3+ | Vin3 |
| 10 | Vin3- | Vin11 |
| 11 | Vin4+ | Vin4 |
| 12 | Vin4- | Vin12 |
| 13 | Vin5+ | Vin5 |
| 14 | Vin5- | Vin13 |
| 15 | Vin6+ | Vin6 |
| 16 | Vin6- | Vin14 |
| 17 | Vin7+ | Vin7 |
| 18 | Vin7- | Vin15 |
| 19 | AGND | AGND |
| 20 | AGND | AGND |

Wire Connection

| Input Type | Differential | Single-ended |
|----------------------|---|--|
| Voltage Input Wiring | <p>Diagram showing a voltage source (mV/V) connected to a differential input pair (Vin+, Vin-). The input pair is represented by two circles with a vertical line between them.</p> | <p>Diagram showing a voltage source (mV/V) connected to a single-ended input pair (Vin, AGND). The input pair is represented by two circles with a vertical line between them.</p> |
| Current Input Wiring | <p>Diagram showing a current source (125Ω) connected to a differential input pair (Vin+, Vin-). The input pair is represented by two circles with a vertical line between them.</p> | <p>Diagram showing a current source (125Ω) connected to a single-ended input pair (Vin, AGND). The input pair is represented by two circles with a vertical line between them.</p> |

Note: When connecting to a current source, an optional external 125-Ohm resistor is required.



i-8000 AI/ AO Modules

AO Modules



i-8024
i-8024(G)

4-channel Isolated Analog Output Module

Description

- AI modules have high sampling rate from 1K to 100Ksps (depends on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware



Specifications

Analog Output

| | | | |
|-----------------|--|---------------------------|--|
| Output channels | 4 | Resolution | 14-bit |
| Output type | +/- 10V, 0 ~ +20mA | Voltage output capability | 10V@5mA |
| Zero drift | Voltage: +/-30μV/ °C Current: +/-0.2μA/ °C | Programmable output slope | 0.125 to 2048 mA/ second 0.0625 to 1024 V/ second |
| Span drift | +/- 20ppm/°C | Current load resistance | External +24V : 1050 Ohms |
| Accuracy | +/- 0.1% of FSR for voltage output ; +/- 0.2% of FSR for current output | Readback accuracy | +/-1% of FSR |

Intra-module isolation, field to logic : 3000 VDC

LED Display

1 LED as Power/ Communication Indicator

















Power Consumption

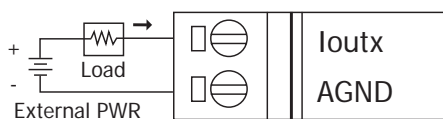
0.25A @ 5V = 1.25W , +/- 5% For Hardware version 3.1

Ordering Information

| | |
|----------|--|
| i-8024 | 4-channel 14-bit analog output module (Blue Cover) |
| i-8024-G | 4-channel 14-bit analog output module (Gray color) |

Pin Assignment

| Terminal No. | Pin Assignment Name |
|---|---------------------|
|  | 01 lout0 |
|  | 02 AGND |
|  | 03 lout1 |
|  | 04 AGND |
|  | 05 lout2 |
|  | 06 AGND |
|  | 07 lout3 |
|  | 08 AGND |
|  | 09 Vout0 |
|  | 10 AGND |
|  | 11 Vout1 |
|  | 12 AGND |
|  | 13 Vout2 |
|  | 14 AGND |
|  | 15 Vout3 |
|  | 16 AGND |



i-8000 DI/ DO Modules



i-8037
i-8037(G)

DO Modules

16-channel Isolated Open-Collector Output Module



Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

| Digital Output | |
|--|--|
| Outputs per module | 16 Channels |
| Output type | Open-Collector (PNP) |
| Load voltage | 30VDC (max.) |
| Load Current per channel | 100mA (max.) |
| Isolation voltage | 3750Vrms |
| Power | |
| Power consumption | 0.1A @ 5V = 0.5W, +/- 5% For Hardware version 1.2 |
| LED Display | |
| 1 LED as Power Indicator 16 LEDs as Digital Output Indicators | |

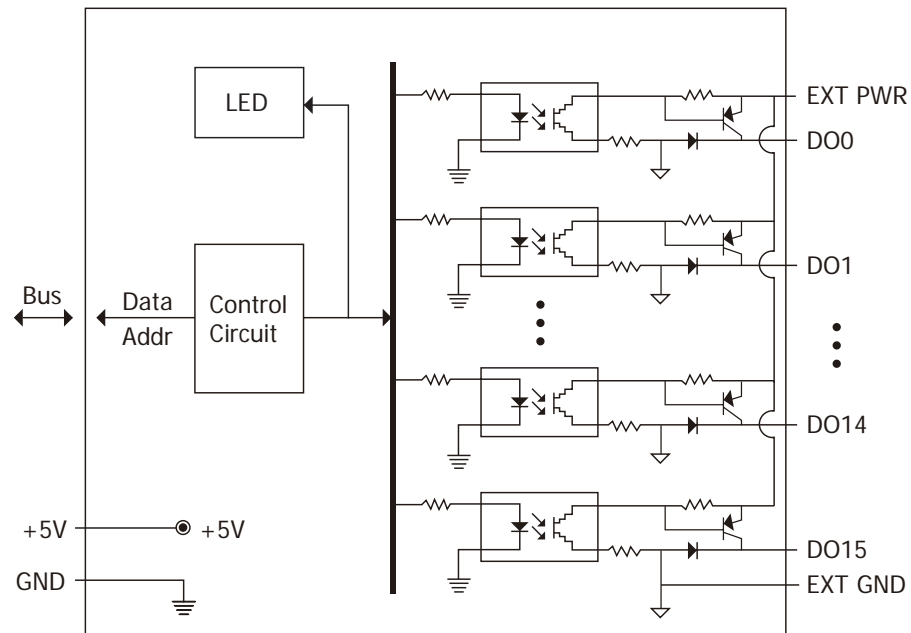
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DO0 |
| 02 | DO1 |
| 03 | DO2 |
| 04 | DO3 |
| 05 | DO4 |
| 06 | DO5 |
| 07 | DO6 |
| 08 | DO7 |
| 09 | DO8 |
| 10 | DO9 |
| 11 | DO10 |
| 12 | DO11 |
| 13 | DO12 |
| 14 | DO13 |
| 15 | DO14 |
| 16 | DO15 |
| 17 | EXT GND |
| 18 | EXT GND |
| 19 | EXT PWR |
| 20 | EXT PWR |

Ordering Information

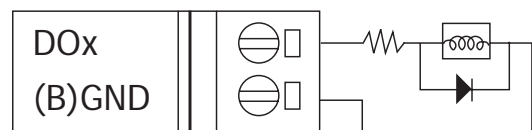
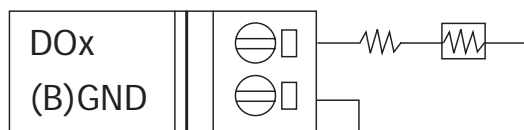
| | |
|-------------|--|
| i-8037 CR | 16-channel Isolated Open-Collector Output Module (Blue Cover) (RoHS) |
| i-8037-G CR | 16-channel Isolated Open-Collector Output Module (Gray Cover) (RoHS) |

Internal I/O Structure



Wire Connection

Output



i-8000 DI/ DO Modules

Digital Input Modules

32-channel Isolated Digital Input Module



i-8040
i-8040(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware



Specifications

| Digital Input | | | |
|---|--|---|----------------|
| Input channels | 32 (Sink/ source) | Input impedance | 3K Ohms, 0.33W |
| On voltage level | +3.5V ~ 30V | Off voltage level | +1V max |
| Input type | Isolation, One Common for All Digital Inputs | Intra-module Isolation , Field to Logic: | 3750Vrms |
| Power consumption | | LED Display | |
| 0.32A @ 5V = 1.6W, +/- 5% For Hardware version 9.2 | | 1 LED as Power Indicator 32 LEDs as Digital Input Indicators | |

Ordering Information

| | |
|-------------|--|
| i-8040 CR | 32-channel Isolated Digital Input Module (Blue Cover) (RoHS) |
| i-8040-G CR | 32-channel Isolated Digital Input Module (Gray Cover) (RoHS) |



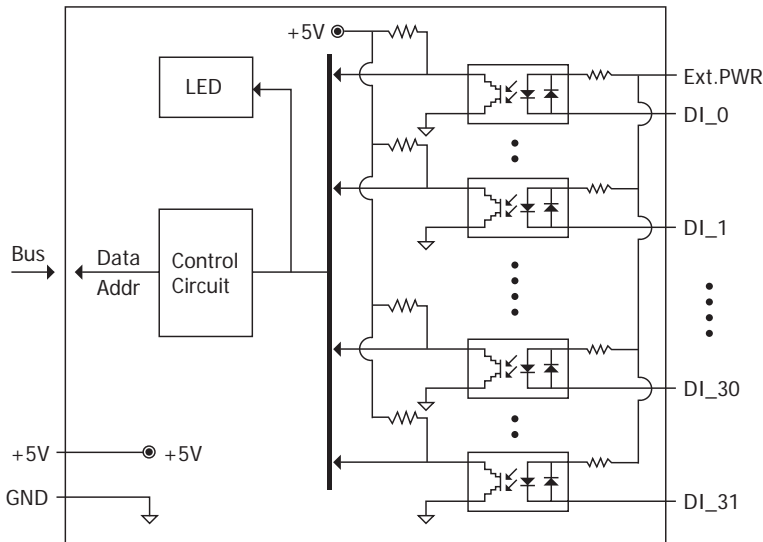
i-8040/ 41/ 42 and i-87040/ 41
with DN-37-381-A

Optional Accessories

| | |
|-------------|--|
| DN-37-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:5.08mm) |
| DN-37-381-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:3.81mm) |
| MD-12 | Output type MagicWire for i-8040/ i-87040 |
| CA-3705A | Male-Female D-sub cable 0.5M |
| CA-3710A | Male-Female D-sub cable 1M |
| CA-3715A | Male-Female D-sub cable 1.5M |

Internal I/O Structure

Pin Assignment



| Pin Assignment Name | Terminal No. | Pin Assignment Name |
|---------------------|--------------|---------------------|
| Ext.PWR | 19 | Ext.PWR |
| NC | 18 | NC |
| NC | 17 | NC |
| DI_15 | 16 | DI_31 |
| DI_14 | 15 | DI_30 |
| DI_13 | 14 | DI_29 |
| DI_12 | 13 | DI_28 |
| DI_11 | 12 | DI_27 |
| DI_10 | 11 | DI_26 |
| DI_9 | 10 | DI_25 |
| DI_8 | 09 | DI_24 |
| DI_7 | 08 | DI_23 |
| DI_6 | 07 | DI_22 |
| DI_5 | 06 | DI_21 |
| DI_4 | 05 | DI_20 |
| DI_3 | 04 | DI_19 |
| DI_2 | 03 | DI_18 |
| DI_1 | 02 | DI_17 |
| DI_0 | 01 | DI_16 |

37-pin Male D-Sub Connector

Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|----------------------------------|------------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| NPN Output | Open Collector On | Open Collector Off |
| | | |
| PNP Output | Open Collector On | Open Collector Off |
| | | |

i-8000 DI/ DO Modules

Digital Output Modules

32-channel Isolated Digital Output Module



i-8041
i-8041(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

| ■ Digital Output | | | |
|--|-----------------|--|-------------------------|
| Output channels | 32 (Sink) | Output type | Isolated Open-collector |
| Max load current | 100 mA/ Channel | Intra-module Isolation, Field to Logic : | 3750Vrms |
| Load voltage | 5 to 30 Vdc | | |
| ■ Power consumption | | ■ LED Display | |
| 0.34A @ 5V = 1.7W , +/- 5% For Hardware version 9.0 | | 1 LED as Power Indicator 32 LEDs as Digital Output Indicators | |

Ordering Information

| | |
|-------------|---|
| i-8041 CR | 32-channel Isolated Digital Output Module (Blue Cover) (RoHS) |
| i-8041-G CR | 32-channel Isolated Digital Output Module (Gray Cover) (RoHS) |



i-8041 and i-87041 with DN-8K32R

Optional Accessories

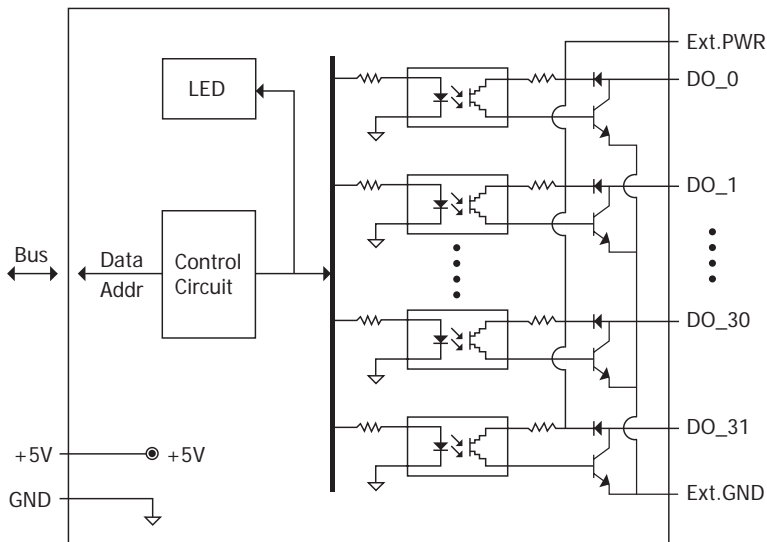
| | |
|------------------|---|
| DN- 8K32R | 32-channel relay output board, Include : CA- 3705A (37 Pin Male-Female D-sub cable 0.5M) |
| DN-37-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:5.08mm) |
| DN-37-381-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:3.81mm) |
| MD-11 | Output type MagicWire for i-8041/ i-87041 |
| CA-3705A/10A/15A | Male-Female D-sub cable 0.5M/1M/1.5M |



i-8040/ 41/ 42 and i-87040/ 41 with DN-37-381-A

Internal I/O Structure

Pin Assignment



| Pin Assignment Name | Terminal No. | Pin Assignment Name |
|---------------------|--------------|---------------------|
| Ext.PWR | 19 | Ext.PWR |
| Ext.GND | 18 | Ext.GND |
| Ext.GND | 17 | Ext.GND |
| DO_15 | 16 | DO_31 |
| DO_14 | 15 | DO_30 |
| DO_13 | 14 | DO_29 |
| DO_12 | 13 | DO_28 |
| DO_11 | 12 | DO_27 |
| DO_10 | 11 | DO_26 |
| DO_9 | 10 | DO_25 |
| DO_8 | 09 | DO_24 |
| DO_7 | 08 | DO_23 |
| DO_6 | 07 | DO_22 |
| DO_5 | 06 | DO_21 |
| DO_4 | 05 | DO_20 |
| DO_3 | 04 | DO_19 |
| DO_2 | 03 | DO_18 |
| DO_1 | 02 | DO_17 |
| DO_0 | 01 | DO_16 |

37-pin Male D-Sub Connector

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-------------|----------------------------------|------------------------------------|
| Drive Relay | Relay ON | Relay Off |
| | Resistance Load | Resistance Load |

i-8000 DI/ DO Modules

Digital Input & Output Modules



16-channel Isolated Digital Input & 16-channel Isolated Digital Output Module 

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware

i-8042

i-8042(G)



Specifications

| ■ Digital Input | | | |
|---|--|--|-------------------------|
| Input channels | 16 (Sink/ source) | Input impedance | 3K Ohms, 0.33W |
| On voltage level | +3.5V ~ 30V | Off voltage level | +1V max |
| Input type | Isolation, One Common for All Digital Inputs | Intra-module Isolation , Field to Logic | 3750Vrms |
| ■ Digital Output | | | |
| Output channels | 16 (Sink) | Output type | Isolated Open-collector |
| Max load current | 100 mA/ Channel | Intra-module Isolation, Field to Logic : | 3750Vrms |
| Load voltage | 5 to 30 Vdc | | |
| ■ Power consumption | | ■ LED Display | |
| 0.3A @ 5V = 1.5W , +/- 5% For Hardware version 7.1 | | 1 LED as Power Indicator 32 LEDs as Digital Input and Output Indicators | |

Optional Accessories

| | |
|------------------|--|
| DN-37-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:5.08mm) |
| DN-37-381-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:3.81mm) |
| CA-3705A/10A/15A | Male-Female D-sub cable 0.5/1/1.5M |

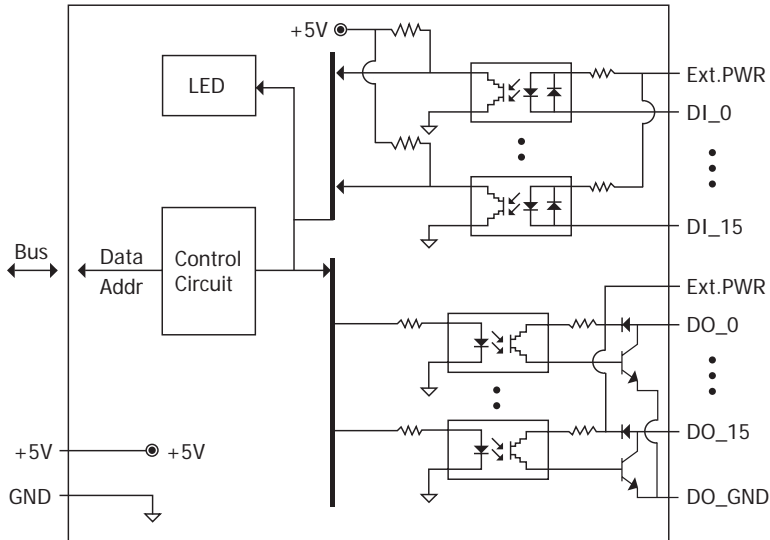


i-8040/ 41/ 42 and i-87040/ 41 with DN-37-381-A

Ordering Information

| | |
|-------------|---|
| i-8042 CR | 16-channel Isolated Digital Input & 16-channel Isolated Digital Output Module (Blue Cover) (RoHS) |
| i-8042-G CR | 16-channel Isolated Digital Input & 16-channel Isolated Digital Output Module (Gray Cover) (RoHS) |

Internal I/O Structure



Pin Assignment

| Pin Assignment Name | Terminal No. | Pin Assignment Name |
|---------------------|--------------|---------------------|
| Ext.PWR | 19 | Ext.PWR |
| Ext.GND | 18 | Ext.GND |
| Ext.GND | 17 | DO_12 |
| DI_15 | 16 | DO_13 |
| DI_14 | 15 | DO_14 |
| DI_13 | 14 | DO_15 |
| DI_12 | 13 | DO_8 |
| DI_11 | 12 | DO_9 |
| DI_10 | 11 | DO_10 |
| DI_9 | 10 | DO_11 |
| DI_8 | 09 | DO_4 |
| DI_7 | 08 | DO_5 |
| DI_6 | 07 | DO_6 |
| DI_5 | 06 | DO_7 |
| DI_4 | 05 | DO_0 |
| DI_3 | 04 | DO_1 |
| DI_2 | 03 | DO_2 |
| DI_1 | 02 | DO_3 |
| DI_0 | 01 | |

37-pin Male D-Sub Connector

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|-------------------------------|---------------------------------|
| Drive Relay | <p>Relay Off</p> | <p>Relay Off</p> |
| Resistance Load | | |

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | <p>Relay ON</p> | <p>Relay Off</p> |
| TTL/CMOS Logic | <p>Voltage < 1V</p> | <p>Voltage > 3.5V</p> |
| NPN Output | <p>Open Collector On</p> | <p>Open Collector Off</p> |
| PNP Output | <p>Open Collector On</p> | <p>Open Collector Off</p> |

i-8000 DI/ DO Modules

Digital Input & Output Modules



16-channel Universal Digital I/O Module



Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware

i-8050
i-8050(G)

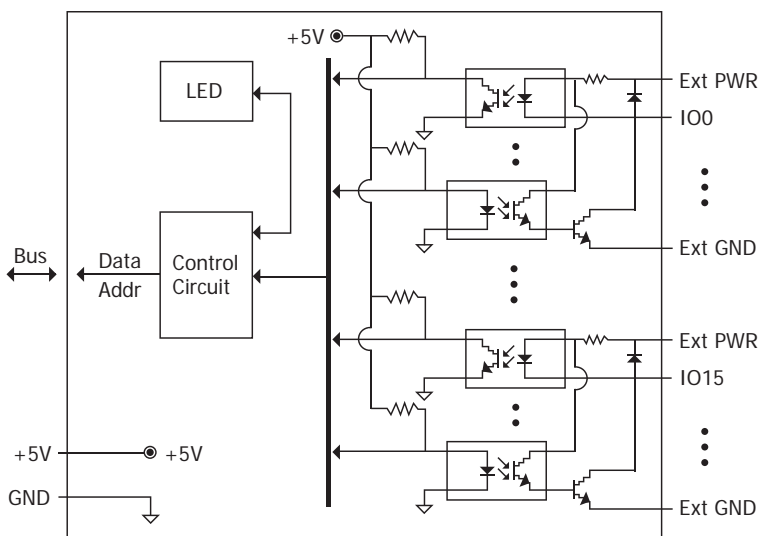


Specifications

| Digital Input | | Digital Output | |
|---------------------|--|---------------------|--|
| Input channels | 16 | Output type | Open Collector |
| I/O Type | I/O select by programming | Output range | 100 mA, 30V |
| Input impedance | 3K Ω , 0.5W | DO isolated voltage | 3750 Vrms |
| Digital input level | Logical level 0: +1V Max. Logical level 1: +3.5V to +30V | Power | |
| DI isolated voltage | 3750 Vrms | Power consumption | 0.2A @ 5V = 1W, +/- 5% For Hardware version 2.4 |
| LED | 1 LED as Power Indicator, 16 LEDs as Digital Input and Output Indicators | | |

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | IO0 |
| 02 | IO1 |
| 03 | IO2 |
| 04 | IO3 |
| 05 | IO4 |
| 06 | IO5 |
| 07 | IO6 |
| 08 | IO7 |
| 09 | IO8 |
| 10 | IO9 |
| 11 | IO10 |
| 12 | IO11 |
| 13 | IO12 |
| 14 | IO13 |
| 15 | IO14 |
| 16 | IO15 |
| 17 | ExtGND |
| 18 | ExtGND |
| 19 | ExtPWR |
| 20 | ExtPWR |

Wire Connection

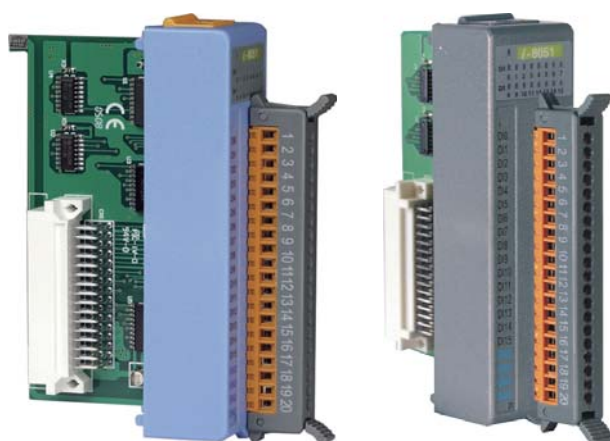
| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|----------------------------------|------------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |
| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
| Resistance Load | Relay ON | Relay Off |
| | | |

Ordering Information

| | |
|-------------|---|
| i-8050 CR | 16-channel Universal Digital I/O Module (Blue Cover) (RoHS) |
| i-8050-G CR | 16-channel Universal Digital I/O Module (Gray Cover) (RoHS) |

i-8000 DI/ DO Modules

Digital Input Modules



16-channel Digital Input Module



Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware

i-8051
i-8051(G)



Specifications

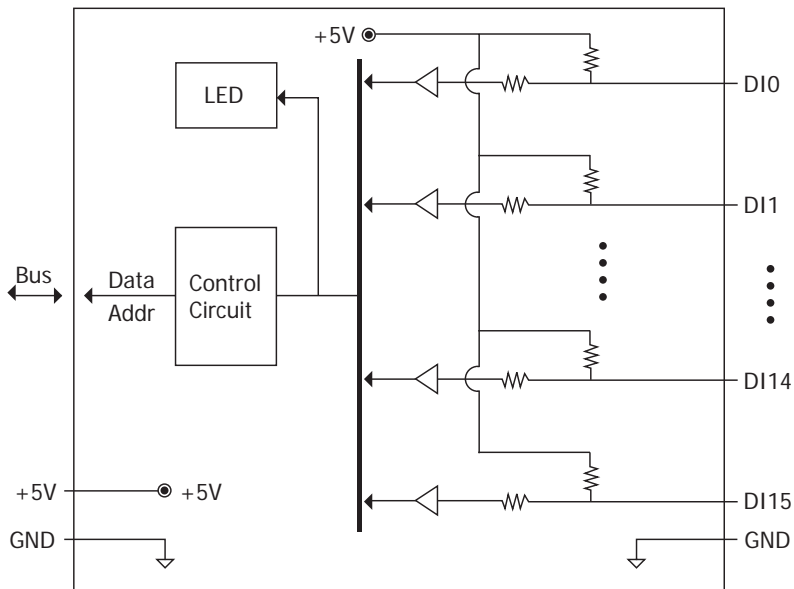
| Digital Input | |
|---|---|
| Input channels | 16 (Sink) |
| Input type | Non-isolated |
| On voltage level | +1V max (Connect to GND.) |
| Off Voltage Level | +3.5V ~ 30V (Open) |
| LED Display | |
| 1 LED as Power Indicator 16 LEDs as Digital Input Indicators | |
| Power | |
| Power consumption | 0.2 @ 5V = 1W, +/- 5% For Hardware version 2.0 |
| Environment | |
| Operating Temperature | -25 to 75 °C |
| Storage Temperature | -30 to 75 °C |
| Humidity | 5 to 95%, Non-condensing |
| Dimensions | |
| 31mm x 67mm x 114mm (W x D x H) | |

Ordering Information

| | |
|-------------|---|
| i-8051 CR | 16-channel Non-isolation Digital Input Module (Blue Cover) (RoHS) |
| i-8051-G CR | 16-channel Non-isolation Digital Input Module (Gray Cover) (RoHS) |

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0 |
| 02 | DI1 |
| 03 | DI2 |
| 04 | DI3 |
| 05 | DI4 |
| 06 | DI5 |
| 07 | DI6 |
| 08 | DI7 |
| 09 | DI8 |
| 10 | DI9 |
| 11 | DI10 |
| 12 | DI11 |
| 13 | DI12 |
| 14 | DI13 |
| 15 | DI14 |
| 16 | DI15 |
| 17 | GND |
| 18 | GND |
| 19 | GND |
| 20 | GND |

Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|----------------------------------|------------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

i-8000 DI/ DO Modules

Digital Input Modules

8-channel Digital Input Module



i-8052
i-8052(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware



Specifications

Digital Input

| | |
|--|-------------------------|
| Input channels | 8 |
| Input Type | Isolation, Differential |
| On voltage level | +3.5V ~ 30V |
| Off voltage level | +1V max. |
| Input resistance | 3K Ω , 0.5W |
| Intra-module isolation, field to logic : 5000 Vrms | |

Power

| | |
|-------------------|--|
| Power consumption | 0.16A @ 5V = 0.8W , +/- 5% For Hardware version 3.0 |
|-------------------|--|

LED Display

1 LED as Power Indicator
8 LEDs as Digital Input Indicators

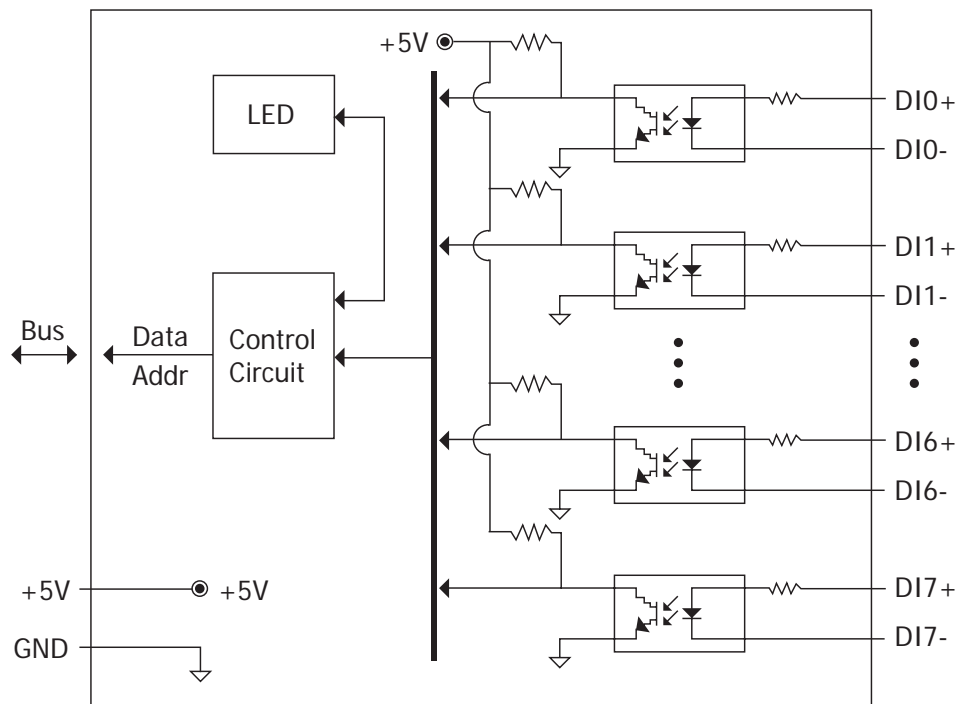
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0+ |
| 02 | DI0- |
| 03 | DI1+ |
| 04 | DI1- |
| 05 | DI2+ |
| 06 | DI2- |
| 07 | DI3+ |
| 08 | DI3- |
| 09 | DI4+ |
| 10 | DI4- |
| 11 | DI5+ |
| 12 | DI5- |
| 13 | DI6+ |
| 14 | DI6- |
| 15 | DI7+ |
| 16 | DI7- |

Ordering Information

| | |
|-------------|---|
| i-8052 CR | 8-channel Isolated Digital Input Module (Blue Cover) (RoHS) |
| i-8052-G CR | 8-channel Isolated Digital Input Module (Gray Cover) (RoHS) |

Internal I/O Structure



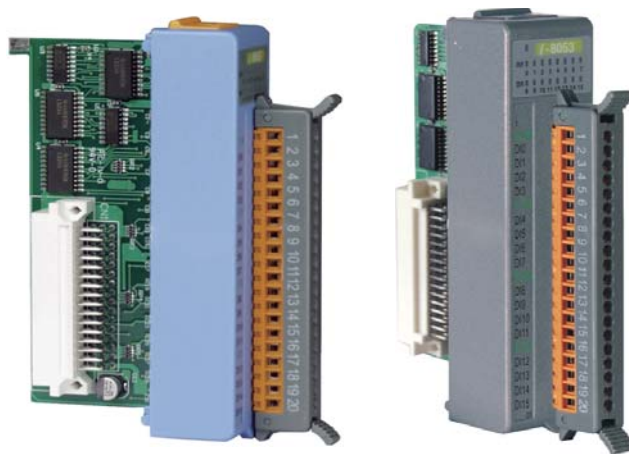
Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

i-8000 DI/ DO Modules

Digital Input Modules

16-channel Isolated Digital Input Module



i-8053
i-8053(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- (G) : means gray color
- Support EZ Data Logger Freeware



Specifications

Pin Assignment

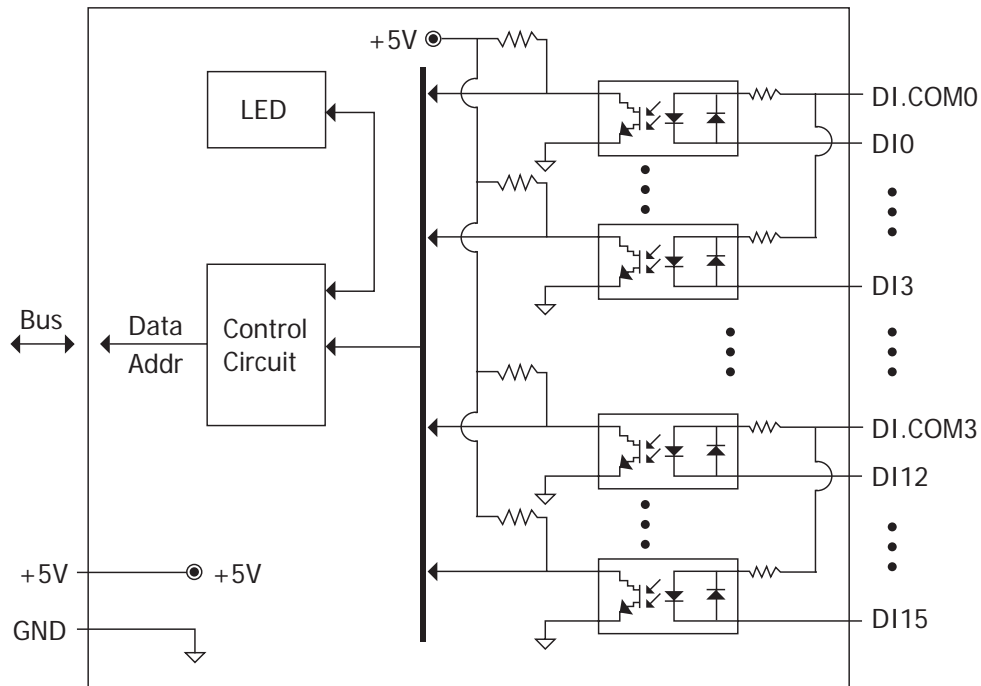
| Digital Input | |
|---|---|
| Input channels | 16 (Sink/ source) |
| Input type | Isolation, Four Commons for All Inputs |
| On voltage level | +3.5V ~ 30V |
| On voltage level | +1V max. |
| Input resistance | 3K Ohms, 0.25W |
| Intra-module isolation, field to logic : 3750V rms | |
| Power | |
| Power consumption | 0.18A @ 5V = 0.9W, +/- 5% For Hardware version 2.0 |
| LED Display | |
| 1 LED as Power Indicator 16 LEDs as Digital Input Indicators | |

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI.COM0 |
| 02 | DI0 |
| 03 | DI1 |
| 04 | DI2 |
| 05 | DI3 |
| 06 | DI.COM1 |
| 07 | DI4 |
| 08 | DI5 |
| 09 | DI6 |
| 10 | DI7 |
| 11 | DI.COM2 |
| 12 | DI8 |
| 13 | DI9 |
| 14 | DI10 |
| 15 | DI11 |
| 16 | DI.COM3 |
| 17 | DI12 |
| 18 | DI13 |
| 19 | DI14 |
| 20 | DI15 |

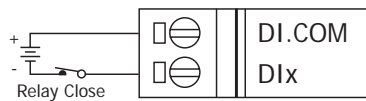
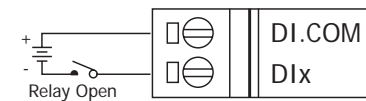
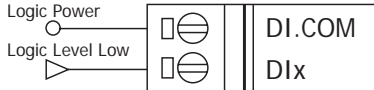
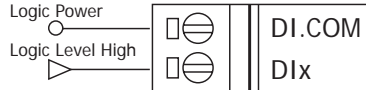
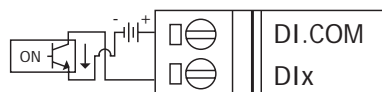
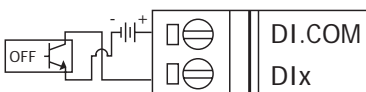
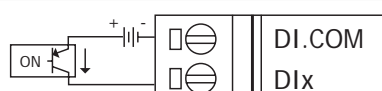
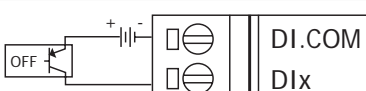
Ordering Information

| | |
|-------------|--|
| i-8053 CR | 16-channel Isolated Digital Input Module (Blue Cover) (RoHS) |
| i-8053-G CR | 16-channel Isolated Digital Input Module (Gray Cover) (RoHS) |

Internal I/O Structure



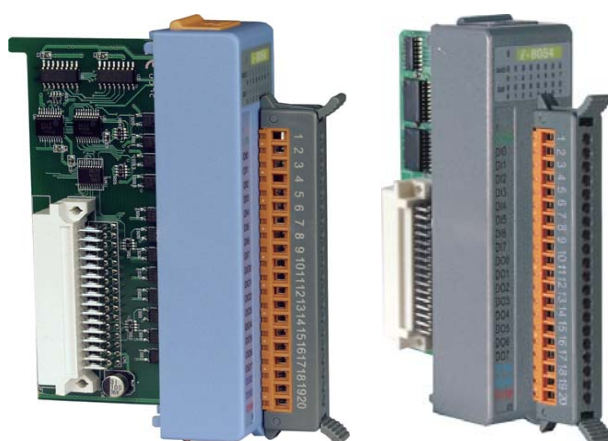
Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|--|--|
| Relay Contact | Relay ON  | Relay Off  |
| | | |
| TTL/CMOS Logic | Voltage < 1V  | Voltage > 3.5V  |
| | | |
| NPN Output | Open Collector On  | Open Collector Off  |
| | | |
| PNP Output | Open Collector On  | Open Collector Off  |
| | | |

i-8000 DI/ DO Modules

Digital Input & Output Modules

16-channel Isolated Digital I/O Module



i-8054
i-8054(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



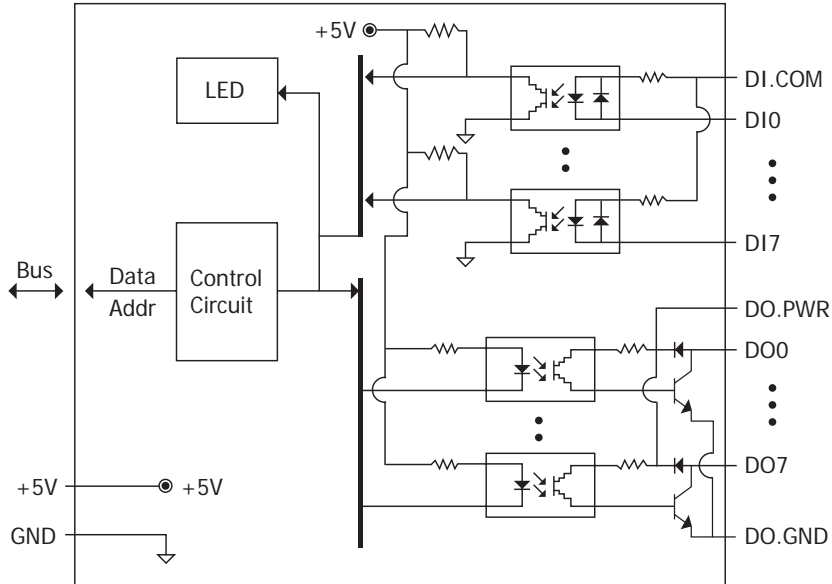
Specifications

| ■ Digital Input | | | |
|--|--|--|--|
| Input channels | 8 (Sink/ source) | Input impedance | 3K Ohms, 0.25W |
| Input type | Isolation, One Common for All Digital Inputs | | |
| On voltage level | +3.5V ~ 50V | 4KV ESD protection | Yes, Contact for each terminal |
| Off voltage level | +1V max | Intra-module isolation, Field to Logic : 3750 Vrms | |
| ■ Digital Output | | | |
| Output channels | 8 (Sink) | Output type | Isolated Open-collector |
| Max load current | 375mA/ channel | Intra-module isolation, field to logic : 3750 Vrms | |
| Load voltage | 5 to 30Vdc | ■ Dimensions | 31 x 81 x 114 (W x D x H) |
| ■ LED Display | | ■ Power | |
| 1 LED as Power Indicator 16 LEDs as Digital Input and Output Indicators | | Power consumption | 0.2A @ 5V = 1W , +/- 5% For Hardware version 2.5 |

Ordering Information

| | |
|-------------|---|
| i-8054 CR | 8-channel Isolated Digital Input & 8-channel Isolated Digital Output Module (Blue Cover) (RoHS) |
| i-8054-G CR | 8-channel Isolated Digital Input & 8-channel Isolated Digital Output Module (Gray Cover) (RoHS) |

Internal I/O Structure Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI.COM |
| 02 | DI0 |
| 03 | DI1 |
| 04 | DI2 |
| 05 | DI3 |
| 06 | DI4 |
| 07 | DI5 |
| 08 | DI6 |
| 09 | DI7 |
| 10 | DO.PWR |
| 11 | DO0 |
| 12 | DO1 |
| 13 | DO2 |
| 14 | DO3 |
| 15 | DO4 |
| 16 | DO5 |
| 17 | DO6 |
| 18 | DO7 |
| 19 | DO.GND |
| 20 | DO.PWR |

Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------------|----------------------------------|------------------------------------|
| Relay Contact | Relay ON | Relay Off |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| NPN Output | Open Collector On | Open Collector Off |
| PNP Output | Open Collector On | Open Collector Off |

Output Type

| | |
|------------------------|---|
| Drive Relay | ON State LED ON Readback as 1 Relay ON |
| | OFF State LED OFF Readback as 0 Relay Off |
| Resistance Load | ON State LED ON Readback as 1 |
| | OFF State LED OFF Readback as 0 |

i-8000 DI/ DO Modules

Digital Input & Output Modules



16-channel Digital I/O Module



Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware

i-8055
i-8055(G)



Specifications

Pin Assignment

Digital Input

| | |
|-------------------|----------------------------|
| Input channels | 8 |
| Input type | Non-isolated digital logic |
| On voltage level | +1V max (Connect to GND) |
| Off Voltage Level | +3.5V ~ +30V (Open) |

Digital Output

| | |
|------------------|-----------------------------|
| Output channels | 8 (Sink) |
| Output type | Non-isolated Open-collector |
| Max load current | 100 mA/ channel |
| Load voltage | +5Vdc to +30Vdc |

LED Display

1 LED as Power Indicator
16 LEDs as Digital Input and Output Indicators

Power

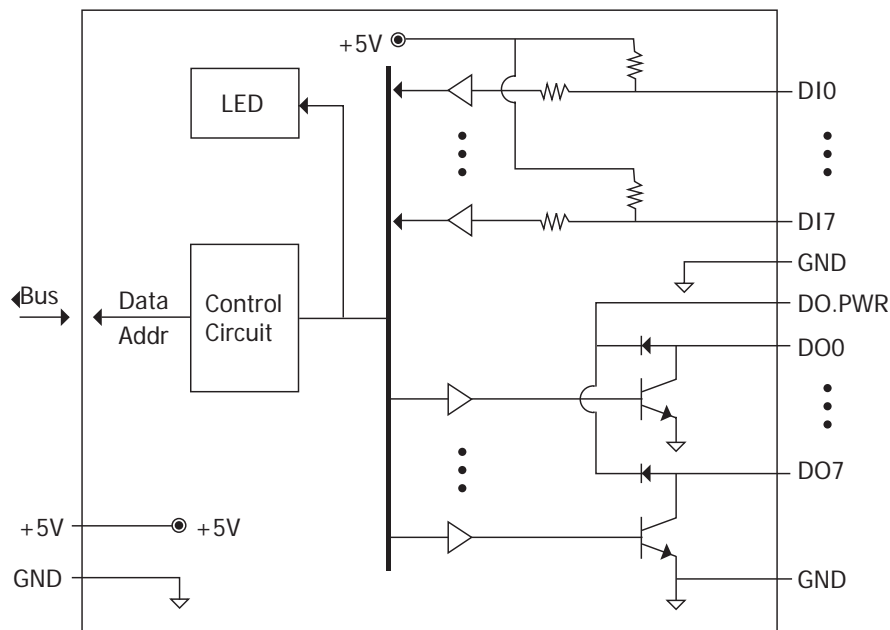
| | |
|-------------------|---|
| Power consumption | 0.1A @ 5V = 0.5W , +/- 5% For Hardware version 2.0 |
|-------------------|---|

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0 |
| 02 | DI1 |
| 03 | DI2 |
| 04 | DI3 |
| 05 | DI4 |
| 06 | DI5 |
| 07 | DI6 |
| 08 | DI7 |
| 09 | GND |
| 10 | GND |
| 11 | GND |
| 12 | DO0 |
| 13 | DO1 |
| 14 | DO2 |
| 15 | DO3 |
| 16 | DO4 |
| 17 | DO5 |
| 18 | DO6 |
| 19 | DO7 |
| 20 | DO.PWR |

Ordering Information

| | |
|-------------|--|
| i-8055 CR | 16-channel Non-isolated digital I/O Module (Blue Cover) (RoHS) |
| i-8055-G CR | 16-channel Non-isolated digital I/O Module (Gray Cover) (RoHS) |

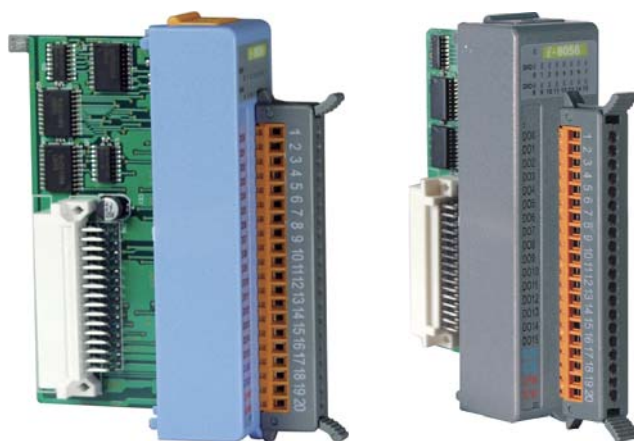
Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|---|---|
| Relay Contact | | |
| TTL/CMOS Logic | | |
| Open Collector | | |
| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
| Drive Relay | | |
| Resistance Load | | |

i-8000 DI/ DO Modules



i-8056 i-8056(G)

Digital Output Modules

16-channel Non-isolated Open Collector Output Module



Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

Digital Output

| | |
|----------------------|-------------|
| Output channels | 16 |
| Output type | Sink output |
| O. C. digital output | 125mA, 30V |

Power

| | |
|-------------------|---|
| Power consumption | 0.14A @ 5V = 0.7W, +/- 5% For Hardware version 2.0 |
|-------------------|---|

LED Display

1 LED as Power Indicator
16 LEDs as Digital Output Indicators

Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DO0 |
| 02 | DO1 |
| 03 | DO2 |
| 04 | DO3 |
| 05 | DO4 |
| 06 | DO5 |
| 07 | DO6 |
| 08 | DO7 |
| 09 | DO8 |
| 10 | DO9 |
| 11 | DO10 |
| 12 | DO11 |
| 13 | DO12 |
| 14 | DO13 |
| 15 | DO14 |
| 16 | DO15 |
| 17 | DO.GND |
| 18 | DO.GND |
| 19 | DO.PWR |
| 20 | DO.PWR |

Ordering Information

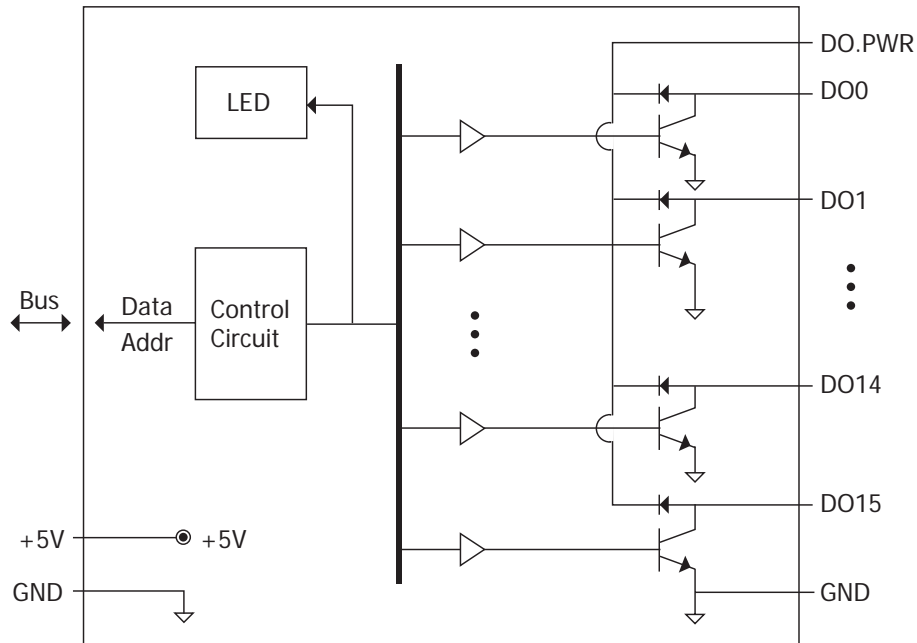
i-8056 CR

16-channel Non-isolated Open Collector Output Module (Gray Cover) (RoHS)

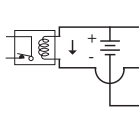
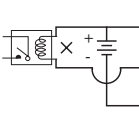
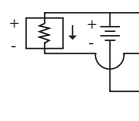
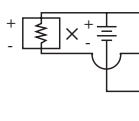
i-8056-G CR

16-channel Non-isolated Open Collector Output Module (Gray Cover) (RoHS)

Internal I/O Structure



Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 | | | | | | |
|-----------------|---|--|-----|-----|--|--------|-----|-----|
| Drive Relay |  <table><tr><td>DO.PWR</td></tr><tr><td>DOx</td></tr><tr><td>GND</td></tr></table> | DO.PWR | DOx | GND |  <table><tr><td>DO.PWR</td></tr><tr><td>DOx</td></tr><tr><td>GND</td></tr></table> | DO.PWR | DOx | GND |
| DO.PWR | | | | | | | | |
| DOx | | | | | | | | |
| GND | | | | | | | | |
| DO.PWR | | | | | | | | |
| DOx | | | | | | | | |
| GND | | | | | | | | |
| Resistance Load |  <table><tr><td>DO.PWR</td></tr><tr><td>DOx</td></tr><tr><td>GND</td></tr></table> | DO.PWR | DOx | GND |  <table><tr><td>DO.PWR</td></tr><tr><td>DOx</td></tr><tr><td>GND</td></tr></table> | DO.PWR | DOx | GND |
| DO.PWR | | | | | | | | |
| DOx | | | | | | | | |
| GND | | | | | | | | |
| DO.PWR | | | | | | | | |
| DOx | | | | | | | | |
| GND | | | | | | | | |

i-8000 DI/ DO Modules



i-8057
i-8057(G)

Digital Output Modules

16-channel Isolated Open Collector Output Module



Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

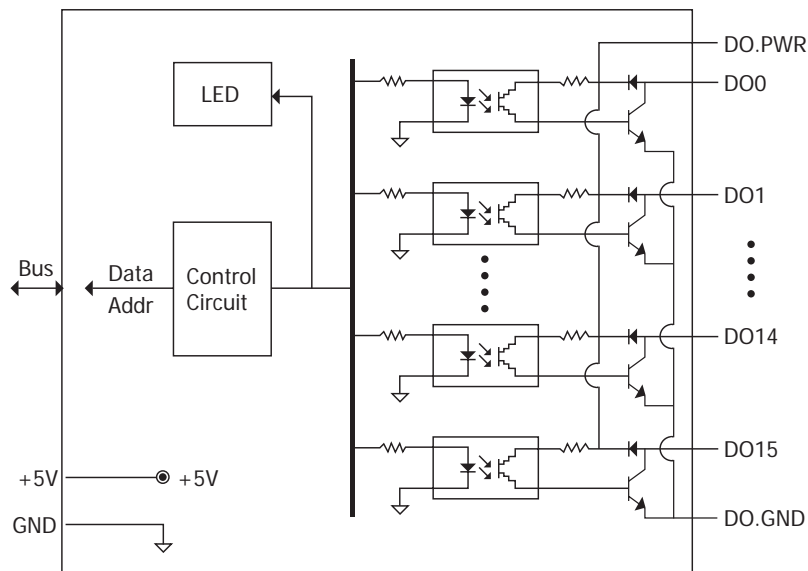
| ■ Digital Output | |
|--|--------------------------|
| Output channels | 16 (Sink) |
| Output type | Isolated Open-collector |
| Max load current | 100 mA/ Channel |
| Load voltage | 5Vdc to 30Vdc |
| Intra-module isolation , Field to Logic | 3750Vrms |
| ■ Power Consumption | |
| 0.2A @ 5V = 1W, +/- 5% For Hardware version 6.5 | |
| ■ Environment | |
| Operating temperature | -25 to 75 °C |
| Storage temperature | -30 to 75 °C |
| Humidity | 5 to 95%, Non-condensing |
| ■ LED Display | |
| 1 LED as Power Indicator 16 LEDs as Digital Output Indicators | |
| ■ Dimensions | |
| 31 x 67 x 114 (W x D x H) | |

Ordering Information

| | |
|-------------|--|
| i-8057 CR | 16-channel Isolated Open Collector Output Module (Blue Cover) (RoHS) |
| i-8057-G CR | 16-channel Isolated Open Collector Output Module (Gray Cover) (RoHS) |

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DO0 |
| 02 | DO1 |
| 03 | DO2 |
| 04 | DO3 |
| 05 | DO4 |
| 06 | DO5 |
| 07 | DO6 |
| 08 | DO7 |
| 09 | DO8 |
| 10 | DO9 |
| 11 | DO10 |
| 12 | DO11 |
| 13 | DO12 |
| 14 | DO13 |
| 15 | DO14 |
| 16 | DO15 |
| 17 | DO.GND |
| 18 | DO.GND |
| 19 | DO.PWR |
| 20 | DO.PWR |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|---|---|
| Drive Relay | | |
| Resistance Load | | |

i-8000 DI/ DO Modules

Digital Input Modules

8-channel Isolated Digital Input Module



i-8058 i-8058(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- (G) : means gray color



Specifications

Pin Assignment

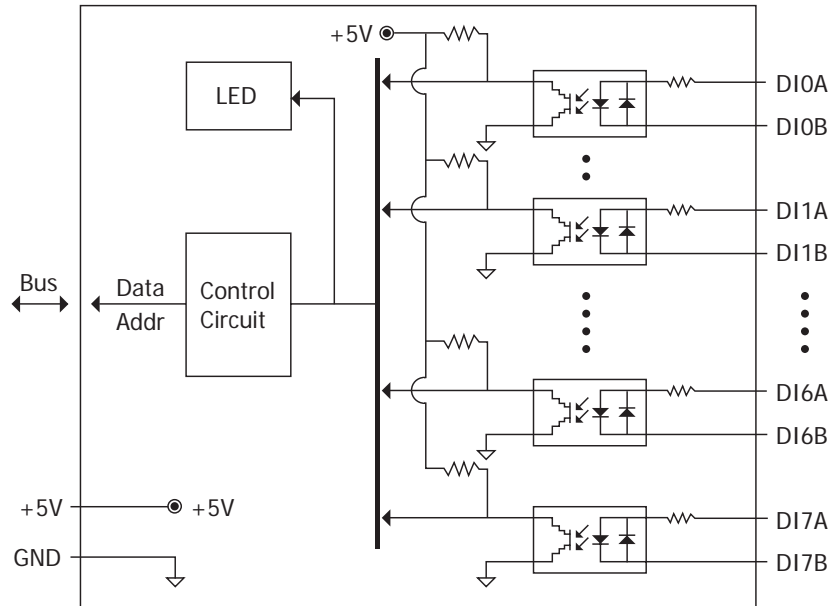
| Digital Input | |
|--|---|
| Input channels | 8 |
| Input type | differential |
| Input voltage | Logical High: AC/DC 80V mini Logical Low: AC/DC 30V max. |
| Max. input voltage | AC/DC 250 V |
| Operating frequency | 1KHz (Max.) |
| Isolation voltage | 3750 Vrms |
| Power | |
| Power consumption | 0.16A @ 5V = 0.8W, +/- 5% For Hardware version 3.1 |
| LED Display | |
| 1 LED as Power Indicator 8 LEDs as Digital Input Indicators | |

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0A |
| 02 | DI0B |
| 03 | DI1A |
| 04 | DI1B |
| 05 | DI2A |
| 06 | DI2B |
| 07 | DI3A |
| 08 | DI3B |
| 09 | DI4A |
| 10 | DI4B |
| 11 | DI5A |
| 12 | DI5B |
| 13 | DI6A |
| 14 | DI6B |
| 15 | DI7A |
| 16 | DI7B |

Ordering Information

| | |
|-----------|--|
| i-8058 CR | 8-channel Isolated Digital Input Module (RoHS) |
|-----------|--|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 30V | Voltage > 80V |
| | | |
| NPN Output | Open Collector On | Open Collector Off |
| | | |



i-8000 DI/ DO Modules

Digital Output Modules

6-channel Relay Output Module



i-8060 i-8060(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

| ■ Digital Output | |
|---|--|
| Output channels | 6 (Form C x 6 channels) |
| Contact rating | AC: 125V @0.6A; 250V @0.3A DC: 30V @2A; |
| Breakdown voltage | 500Vac |
| Relay on time | 3 ms |
| Relay off time | 1 ms |
| Total switch time | 10 ms |
| Insulation resistance | 1000MΩ min. at 500Vdc |
| ■ Power | |
| Power consumption | 0.3A @ 5V = 2.2W, +/- 5% For Hardware version 3.0 |
| ■ LED Display | |
| 1 LED as Power Indicator 6 LEDs as Power Relay output Indicators | |

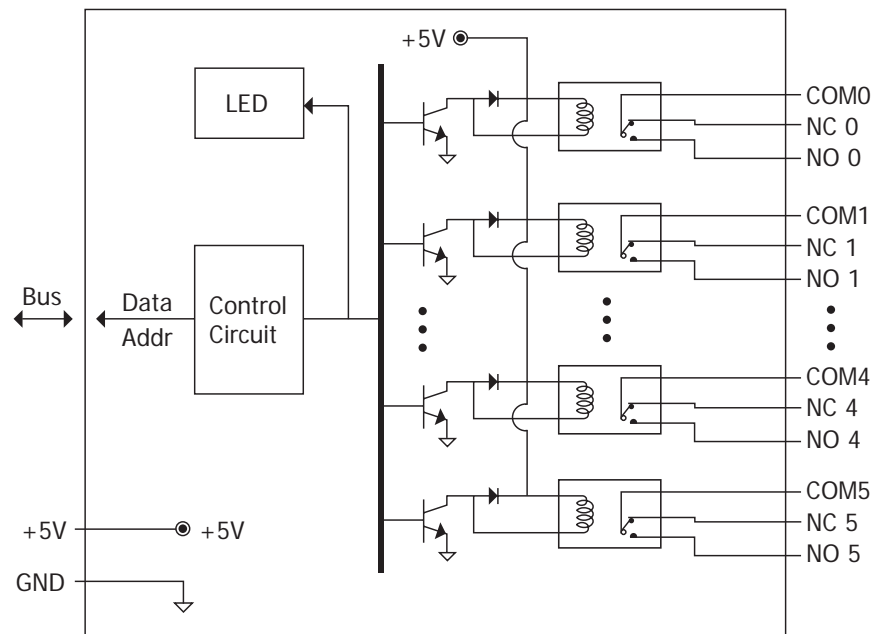
Ordering Information

| | |
|-------------|---|
| i-8060 CR | 6-channel Relay Output Module (Blue Cover) (RoHS) |
| i-8060-G CR | 6-channel Relay Output Module (Gray Cover) (RoHS) |

Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | NO0 |
| 02 | NC0 |
| 03 | COM0 |
| 04 | NO1 |
| 05 | NC1 |
| 06 | COM1 |
| 07 | NO2 |
| 08 | NC2 |
| 09 | COM2 |
| 10 | NO3 |
| 11 | NC3 |
| 12 | COM3 |
| 13 | NO4 |
| 14 | NC4 |
| 15 | COM4 |
| 16 | NO55 |
| 17 | NC |
| 18 | COM5 |
| 19 | - |
| 20 | - |

Internal I/O Structure



Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|-------------------------------|---------------------------------|
| Form C Relay Contact | | |

i-8000 DI/ DO Modules

Digital Input & Output Modules

4-channel Isolated digital input &
4-channel Relay output module



i-8063 i-8063(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

| Digital Input | |
|---|---|
| Input channels | 4 |
| Input type | Differential |
| Relay Output | |
| Output channels | 4 |
| Relay type | Form C relay |
| Contact rating | AC : 125V @ 0.6A ; 250V @ 0.3A |
| Power | |
| Power consumption | 0.44A @ 5V = 2W, +/- 5% For Hardware version 2.2 |
| LED Display | |
| 1 LED as Power Indicator 8 LEDs as Digital Input and Relay output Indicators | |

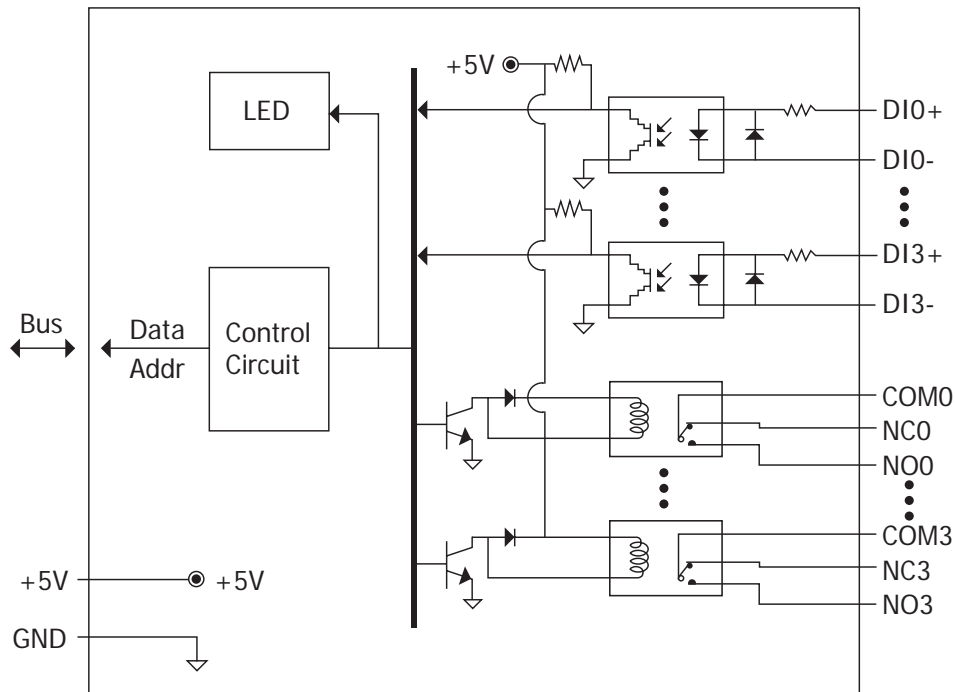
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0+ |
| 02 | DI0- |
| 03 | DI1+ |
| 04 | DI1- |
| 05 | DI2+ |
| 06 | DI2- |
| 07 | DI3+ |
| 08 | DI3- |
| 09 | NO0 |
| 10 | NC0 |
| 11 | COM0 |
| 12 | NO1 |
| 13 | NC1 |
| 14 | COM1 |
| 15 | NO2 |
| 16 | NC2 |
| 17 | COM2 |
| 18 | NO3 |
| 19 | NC3 |
| 20 | COM3 |

Ordering Information

| | |
|-------------|--|
| i-8063 CR | 4-channel Isolated digital input & 4-channel Relay output module. (Blue Cover) (RoHS) |
| i-8063-G CR | 4-channel Isolated digital input & 4-channel Relay output module. (Gray Cover) (RoHS) |

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|---|---|
| Relay Contact | | |
| TTL/CMOS Logic | | |
| Open Collector | | |

i-8000 DI/ DO Modules

Digital Output Modules

8-channel Power Relay Output Module



i-8064
i-8064(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

Digital Output

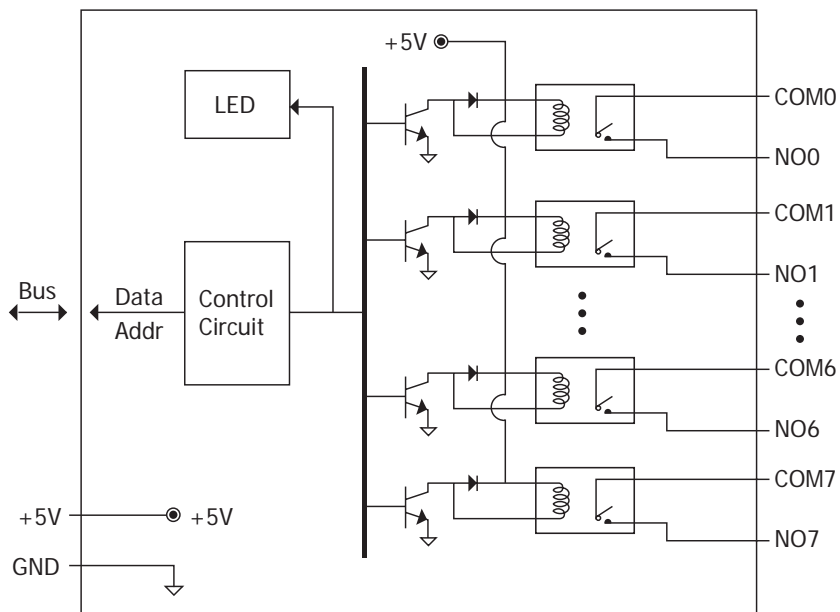
| | | | |
|------------------------------------|---|--------------------------|--|
| Output channels | 8 (Form A x 8 channels) | Max load current | 5.0 Arms |
| Operating voltage range | 5 ~ 240 VAC (47Hz ~ 63Hz) 5 ~ 24 VDC | Max. operate time | 6 ms Max. |
| Output type | Power Relay, Form A (Normal Open) | Max. release time | 3 ms Max. |
| Relay contact voltage range | 0~ 250VAC (47Hz ~ 63Hz) 0~ 30VDC | Surge strength | 4000V (at 1.2*50us) |
| Dielectric strength | between Open Contacts : 750Vrms (at 1 Minute) between Coil and Contacts : 2000Vrms (at 1 Minute) | Relay life | Mechanical : 2*10,000,000 Min. Electrical : 100, 000 min. , Resistive |
| Insulation resistance | Min. 1,000M Ohms, at 500VDC | LED Display | 1 LED as Power Indicator 8 LEDs as Power Relay Indicators |
| | | Power Consumption | 0.44A @ 5V = 2.2W, +/- 5% For Hardware version 3.0 |

Ordering Information

| | |
|-------------|---|
| i-8064 CR | 8-channel Power Relay Output Module (Blue Cover) (RoHS) |
| i-8064-G CR | 8-channel Power Relay Output Module (Gray Cover) (RoHS) |

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | NO0 |
| 02 | COM0 |
| 03 | NO1 |
| 04 | COM1 |
| 05 | - |
| 06 | NO2 |
| 07 | COM2 |
| 08 | NO3 |
| 09 | COM3 |
| 10 | - |
| 11 | NO4 |
| 12 | COM4 |
| 13 | NO5 |
| 14 | COM5 |
| 15 | - |
| 16 | NO6 |
| 17 | COM6 |
| 18 | NO7 |
| 19 | COM7 |
| 20 | - |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---------------|---|--|
| Relay Contact | <p>The diagram shows a relay contact with a load connected to the NOx terminal and the COMx terminal. The load is connected to the AC/DC supply. The relay is in the ON state, indicated by the closed switch symbol.</p> | <p>The diagram shows a relay contact with a load connected to the NOx terminal and the COMx terminal. The load is connected to the AC/DC supply. The relay is in the OFF state, indicated by the open switch symbol.</p> |

i-8000 DI/ DO Modules

Digital Output Modules

8-channel SSR-AC Output Module



i-8065 i-8065(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

| ■ Digital Output | |
|--|---|
| Output channels | 8 (Form A x 8 channels) |
| Contact rating | AC: 24 to 265Vrms @1.0Arms |
| Max. load current | 1.0 Arms |
| Min. load current | 10m Arms |
| Max. off-state leakage current | 0.75mA (at 100 Vrms 60Hz), 1.5 mA (at 200 Vrms 60Hz) |
| 1 cycle surge current | 50A (60Hz) |
| Max. off-state voltage drop | 2Vrms |
| Max. operate time | 1 ms |
| Max. release time | 1/2 cycle + 1 ms |
| Insulation resistance | Min. 1,000 MΩ, at 500Vdc |
| Life | long life, maintenance free |
| 7000 command compatible | |
| Support dual watchdog function | |
| ■ Power | |
| Power consumption | 0.18A @ 5V = 0.9W, +/- 5% For Hardware version 3.0 |
| ■ LED Display | |
| 1 LED as Power Indicator, 8 LEDs as AC-SSR Output Indicators | |

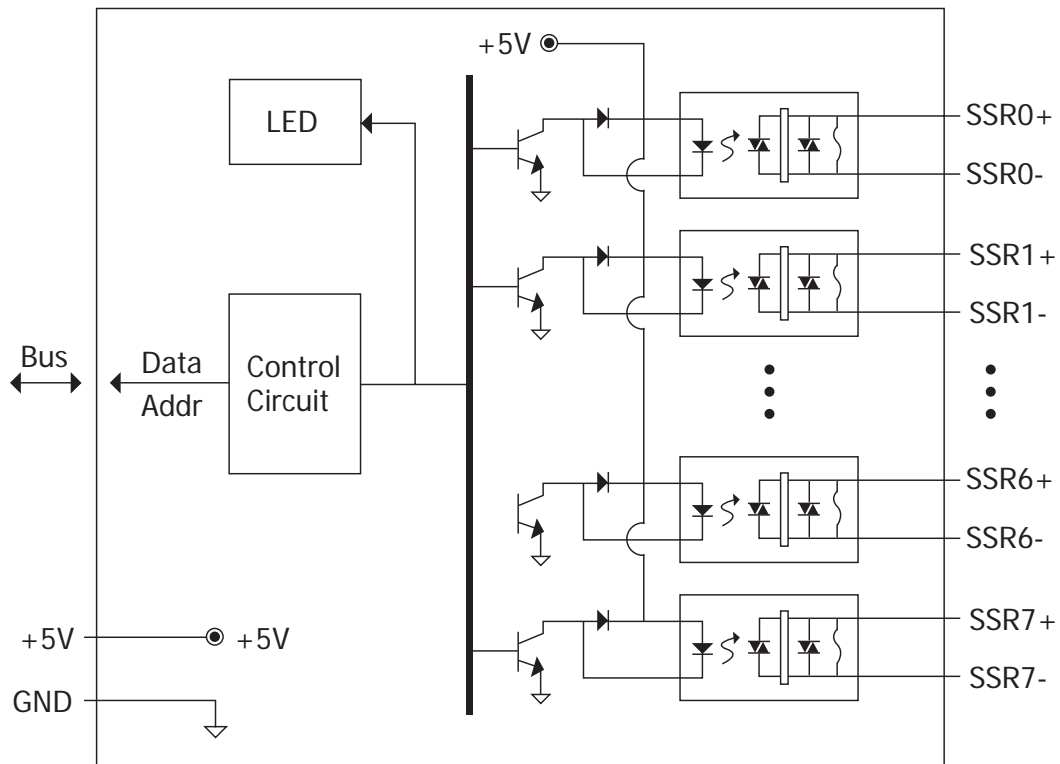
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | SSR0+ |
| 02 | SSR0- |
| 03 | SSR1+ |
| 04 | SSR1- |
| 05 | - |
| 06 | SSR2+ |
| 07 | SSR2- |
| 08 | SSR3+ |
| 09 | SSR3- |
| 10 | - |
| 11 | SSR4+ |
| 12 | SSR4- |
| 13 | SSR5+ |
| 14 | SSR5- |
| 15 | - |
| 16 | SSR6+ |
| 17 | SSR6- |
| 18 | SSR7+ |
| 19 | SSR7- |
| 20 | - |

Ordering Information

| | |
|-------------|--|
| i-8065 CR | 8-channel SSR-AC Output Module (Blue Cover) |
| i-8065-G CR | 8-channel SSR-AC Output Module (Gray Cover) (RoHS) |

Internal I/O Structure



Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---------------|-------------------------------|---------------------------------|
| AC-SSR Output | | |

i-8000 DI/ DO Modules

Digital Output Modules

8-channel SSR-DC Output Module



i-8066
i-8066(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

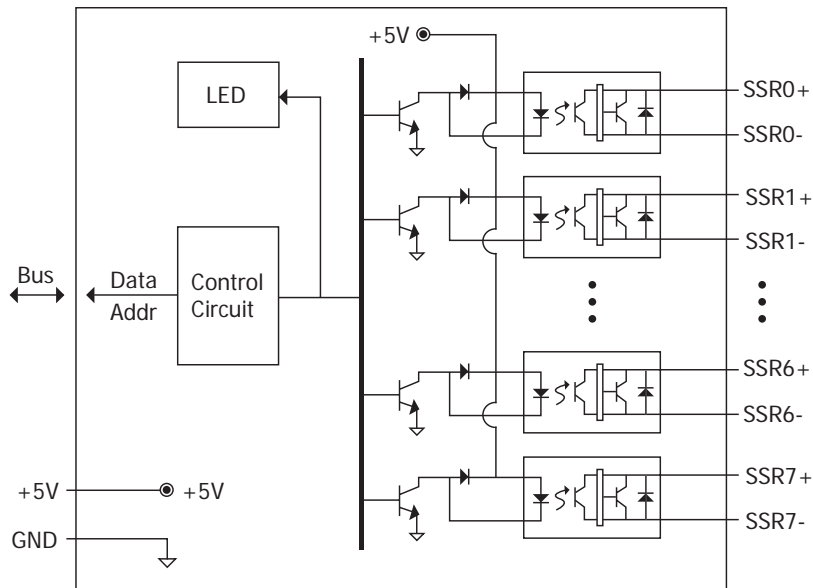
| Digital Output | |
|--|---|
| Output channels | 8 |
| Output type | DC SSR, Form A (Normal Open) |
| Rated load voltage | 3 to 30 VDC |
| Rated load current | 1.0 Arms |
| Max. operate time | 1 ms |
| Max. On-state voltage drop | 1.2 Vrms |
| Max. Off-state leakage current | 0.1mA at 30VDC |
| Insulation resistance | Min. 1,000M Ohm, at 500VDC |
| Dielectric strength | 2500 Vrms |
| Life | Long Life, Maintenance Free |
| Power | |
| Power consumption | 0.16A @ 5V = 0.8W, +/- 5% For Hardware version 3.0 |
| LED Display | |
| 1 LED as Power Indicator 8 LEDs as DC-SSR Output Indicators | |

Ordering Information

| | |
|-------------|--|
| i-8066 CR | 8-channel SSR-DC Output Module (Blue Cover) (RoHS) |
| i-8066-G CR | 8-channel SSR-DC Output Module (Gray Cover) (RoHS) |

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | SSR0+ |
| 02 | SSR0- |
| 03 | SSR1+ |
| 04 | SSR1- |
| 05 | - |
| 06 | SSR2+ |
| 07 | SSR2- |
| 08 | SSR3+ |
| 09 | SSR3- |
| 10 | - |
| 11 | SSR4+ |
| 12 | SSR4- |
| 13 | SSR5+ |
| 14 | SSR5- |
| 15 | - |
| 16 | SSR6+ |
| 17 | SSR6- |
| 18 | SSR7+ |
| 19 | SSR7- |
| 20 | - |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---------------|---|---|
| DC-SSR Output | | |

i-8000 DI/ DO Modules

Digital Output Modules

8-channel Relay Output Module



i-8068
i-8068(G)

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

| Digital Output | |
|---|---|
| Output channels | 8 |
| Contact rating | AC: 120V @ 0.5A DC: 30V @ 1A |
| Output type | Form C x 4, Form A x 4 |
| Insulation resistance | Min. 1000M Ohm, at 500Vdc |
| Power | |
| Power Consumption | 0.48A @ 5V = 2.4W, +/- 5% For Hardware version 3.0 |
| LED Display | |
| 1 LED as Power Indicator 8 LEDs as Power Relay Output Indicators | |

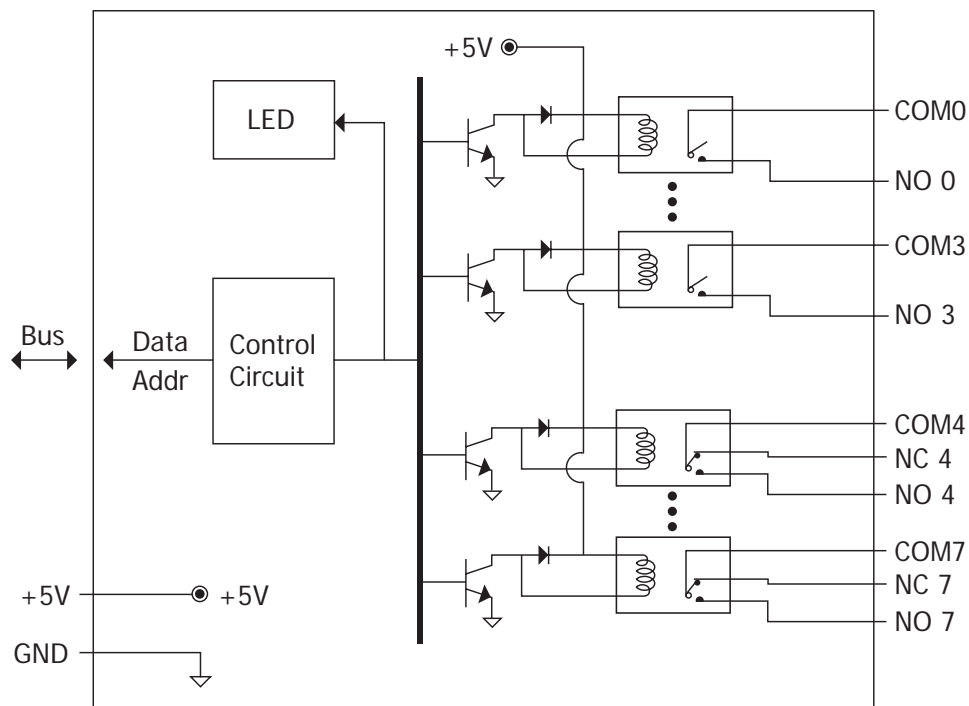
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | NO0 |
| 02 | COM0 |
| 03 | NO1 |
| 04 | COM1 |
| 05 | NO2 |
| 06 | COM2 |
| 07 | NO3 |
| 08 | COM3 |
| 09 | NO4 |
| 10 | NC4 |
| 11 | COM4 |
| 12 | NO5 |
| 13 | NC5 |
| 14 | COM5 |
| 15 | NO6 |
| 16 | NC6 |
| 17 | COM6 |
| 18 | NO7 |
| 19 | NC7 |
| 20 | COM7 |

Ordering Information

| | |
|-------------|---|
| i-8068 CR | 8-channel Relay Output Module (Blue Cover) (RoHS) |
| i-8068-G CR | 8-channel Relay Output Module (Gray Cover) (RoHS) |

Internal I/O Structure



Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|---|---|
| Form A Relay Contact | | |
| Form C Relay Contact | | |



i-8000 DI/ DO Modules



i-8069
i-8069(G)

Digital Output Modules

8-channel Photo MOS Relay Output Module

Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



Specifications

| Digital Output | |
|---|---|
| Output channels | 8 (Form A) |
| Output type | Photo MOS Relay, Form A |
| Load voltage | 350V max. at DC/ AC |
| Load current | 0.13A max. |
| Turn on time | 0.7m s (Typical) |
| Turn off time | 0.05ms (Typical) |
| Peak load current | Peak Load Current |
| Output off state leakage current | 1 uA |
| Output on resistance | 23 Ohms |
| Intra-module isolation, field to logic : 5,000Vrms | |
| Power | |
| Power consumption | 0.16A @ 5V = 0.8W, +/- 5% For Hardware version 2.0 |
| LED Display | |
| 1 LED as Power Indicator 8 LEDs as Photo MOS Relay Output Indicators | |

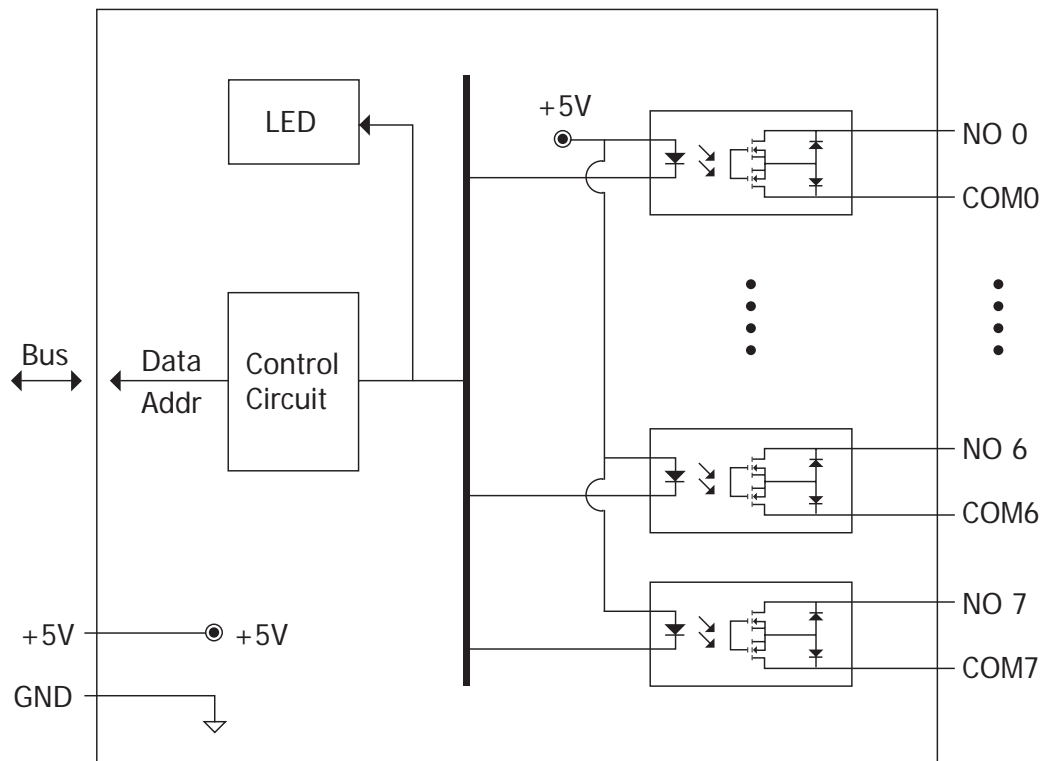
Pin Assignment

| Terminal No. | Pin Assignment Name | |
|--------------|---------------------|--|
| 01 | NO0 | |
| 02 | COM0 | |
| 03 | NO1 | |
| 04 | COM1 | |
| 05 | NO2 | |
| 06 | COM2 | |
| 07 | NO3 | |
| 08 | COM3 | |
| 09 | NO4 | |
| 10 | COM4 | |
| 11 | NO5 | |
| 12 | COM5 | |
| 13 | NO6 | |
| 14 | COM6 | |
| 15 | NO7 | |
| 16 | COM7 | |

Ordering Information

| | |
|----------|--|
| i-8069 | 8-channel Photo MOS Relay Output Module (Blue Cover) |
| i-8069-G | 8-channel Photo MOS Relay Output Module (Gray Cover) |

Internal I/O Structure

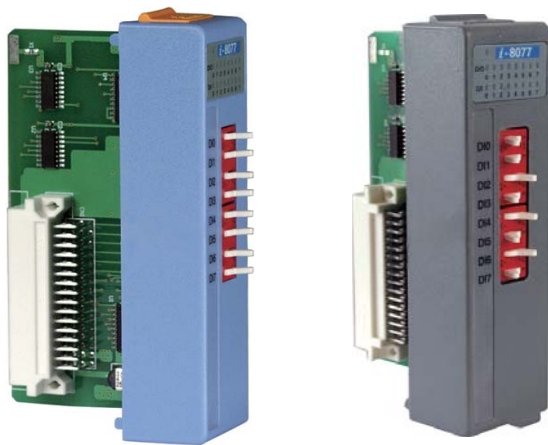


Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|---|---|
| Form A Relay Contact | | |

i-8000 DI/ DO Modules

Digital Input & Output Modules



16-channel Digital I/O Simulator Module



Description

- The accessing time can be up to 20KHz (depend on software)
- Parallel I/O Module
- Support EZ Data Logger Freeware



i-8077
i-8077(G)

Functional Description

The i-8077 Digital Input/Output Simulator Module are designed to be an aid to program development. Use the i-8077 to simulator real world inputs/outputs during your design and debug process.

The i-8077 enables the program development to cause a change in input/output status at will to simulate a system active. And you can monitor status of Digital input/output on the Led. When it becomes time to move to real hardware or control program, replace the i-8077 with the appropriate digital input/output module. The logic of your program will remain the same.

Specifications

| | |
|--|---|
| Digital Input | |
| Input channels | 8 |
| Input type | Toggle switch |
| Digital Output | |
| Output channels | 8 |
| Output type | Programmable |
| Power | |
| Power Consumption | 0.06A @ 5V = 0.3W, +/- 5% For Hardware version 4.0 |
| LED Display | |
| 1 LED as Power Indicator 16 LEDs as Digital Input and Output Indicators | |

Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0 |
| 02 | DI1 |
| 03 | DI2 |
| 04 | DI3 |
| 05 | DI4 |
| 06 | DI5 |
| 07 | DI6 |
| 08 | DI7 |

Ordering Information

| | |
|-------------|---|
| i-8077 CR | 16-channel Digital I/O Simulator Module(Blue Cover) (RoHS) |
| i-8077-G CR | 16-channel Digital I/O Simulator Module (Gray Cover) (RoHS) |

Counter/Frequency Modules

4/8-channel Counter/Frequency Module



i-8080
i-8080(G)

Description

- Input signal range can be 10Hz to 400KHz
- Support EZ Data Logger Freeware (can capture 2 bytes data)



Specifications

Counter/ Frequency Module

| | |
|--|---|
| Mode | 4 channels Up/ Down Counter (Up/ Down) 4 channels Dir/ Pulse Counter (Bi-direction) 8 channels Up Counter 8 channels Frequency |
| Input frequency | 0~450K Hz (Frequency mode) 450K Hz max (Counter mode) |
| Input level | Isolated or TTL level |
| Minimum pulse width | 1 μ sec (Frequency mode) 1 μ sec (Counter mode) |
| Isolated input level | Logic Level 0 : +1V max Logic Level 1 : +4.5V to 30V |
| TTL input level | Logic Level 0 : 0 to 0.8V Logic Level 1 : 2 to 5V |
| Programmable digital noise filter | 1~32767 μ sec |
| Programmable built-in gate time | 0.33sec (Default) |
| Isolated voltage | 3750Vrms |
| Minimum input current | 2mA (Isolated) |
| EEPROM | 128 bytes |
| Display | 1 LED as Power/Communication indicator |
| Power consumption | 1 W |

Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | C0A+ |
| 02 | C0A- |
| 03 | C0B+ |
| 04 | C0B- |
| 05 | C1A+ |
| 06 | C1A- |
| 07 | C1B+ |
| 08 | C1B- |
| 09 | C2A+ |
| 10 | C2A- |
| 11 | C2B+ |
| 12 | C2B- |
| 13 | C3A+ |
| 14 | C3A- |
| 15 | C3B+ |
| 16 | C3B- |
| 17 | GND |
| 18 | GND |
| 19 | GND |
| 20 | GND |

Ordering Information

| | |
|--------|--------------------------------------|
| i-8080 | 4/8-channel Counter/Frequency Module |
|--------|--------------------------------------|

i-8000 Modules

Communication Modules



2-port RS-232 Module

Description

- Used to expand RS232 ports.
- Modem control
- Shared interrupt
- Parallel I/O Module



i-8112

i-8112(G)

Specifications

■ 2-port RS-232 Module

| | |
|--------------------|---|
| Number of ports | 2 |
| Interface | TXD, RXD, RTS, CTS, DSR, DTR, DCD, RI, GND |
| Controller | 16C550 compatible Speed: 115200 bps Max. Data bit: 5, 6, 7, 8 Stop bit: 1, 1.5, 2 Parity: None, Even, Odd, Mark, Space FIFO: Internal 16 bytes |
| Connector | 10-Pin RJ-45 |
| 4KV ESD protection | Yes, Contact for each port. |

■ Power Consumption

0.15A @ 5V = 0.75W, +/- 5% For Hardware version 5.4

■ Software

Support interrupt driven software library
Support VxCOM library

■ Environment

Operating temperature -25 to 75 °C

Storage temperature -40 to 85 °C

Humidity 5 to 95%, Non-condensing

■ LED Display

1 LED as Communication Indicator
2 LEDs as Communication(TxD) Indicators
2 LEDs as Communication(Error) Indicators

■ Include cable

CA-RJ0903 x 1

Ordering Information

| | |
|--------------|------------------------------------|
| i-8112/ CR | 2-Port RS-232 Module (Blue, ROHS) |
| i-8112-G /CR | 2-Port RS-232 Module (Gray, ROHS) |

Suggested Accessory

| | |
|-----------|---|
| CA-RJ0903 | 9-Pin Male D-sub to 10-Pin RJ-45 Cable (30cm) |
| CA-RJ1003 | 10-Pin RJ-45 to 10-Wire Cable (30cm) |

Pin Assignment



10-pin RJ-45

| Pin | | Signal | Mode |
|-----|-----|---------------------|--------|
| 01 | DCD | Data Carrier Detect | Input |
| 02 | DSR | Data Set Ready | Input |
| 03 | RTS | Request To Send | Output |
| 04 | GND | Ground | |
| 05 | TD | Transmit Data | Output |
| 06 | RD | Receive Data | Input |
| 07 | GND | Ground | |
| 08 | CTS | Clear To Send | Input |
| 09 | DTR | Data Term Ready | Output |
| 10 | RI | Ring Indicator | Input |

Communication Modules



i-8114

i-8114(G)

4-port RS-232 Module



Description

- Used to expand RS-232 ports.
- Modem control
- Shared interrupt
- Parallel I/O Module



Specifications

4-port RS-232 Module

| | |
|--------------------|---|
| Number of ports | 4 |
| Interface | TXD, RXD, RTS, CTS, DSR, DTR, DCD, RI, GND |
| Controller | 16C550 compatible Speed: 115200 bps Max. Data bit: 5, 6, 7, 8 Stop bit: 1, 1.5, 2 Parity: None, Even, Odd, Mark, Space FIFO: Internal 16 bytes |
| Connector | 10-Pin RJ-45 |
| 4KV ESD protection | Yes, Contact for each port. |

Power Consumption

0.18A @ 5V = 0.9W, +/- 5% For Hardware version 4.1

Software

Support interrupt driven software library
Support VxCOM library

Environment

| | |
|-----------------------|--------------------------|
| Operating temperature | -25 to 75 °C |
| Storage temperature | -40 to 85 °C |
| Humidity | 5 to 95%, Non-condensing |

LED Display

1 LED as Communication Indicator
4 LEDs as Communication(TxD) Indicators
4 LEDs as Communication(Error) Indicators

Include cable

CA-RJ0903 x 1

Ordering Information

| | |
|--------------|-----------------------------------|
| i-8114/ CR | 4-Port RS-232 Module (Blue, ROHS) |
| i-8114-G/ CR | 4-Port RS-232 Module (Gray, ROHS) |

Suggested Accessory

| | |
|-----------|---|
| CA-RJ0903 | 9-Pin Male D-sub to 10-Pin RJ-45 Cable (30cm) |
| CA-RJ1003 | 10-Pin RJ-45 to 10-Wire Cable (30cm) |

Pin Assignment



10-pin RJ-45

| Pin | Signal | | Mode |
|-----|--------|---------------------|--------|
| 01 | DCD | Data Carrier Detect | Input |
| 02 | DSR | Data Set Ready | Input |
| 03 | RTS | Request To Send | Output |
| 04 | GND | Ground | |
| 05 | TD | Transmit Data | Output |
| 06 | RD | Receive Data | Input |
| 07 | GND | Ground | |
| 08 | CTS | Clear To Send | Input |
| 09 | DTR | Data Term Ready | Output |
| 10 | RI | Ring Indicator | Input |

i-8000 Modules



i-8142 i-8142(G)

Communication Modules

2-port RS-422/485 Module

Description

- Used to expand RS-422/485 ports.
- Self-Tuner Asic inside
- Shared interrupt
- Parallel I/O Module
- The RS-422 and RS-485 couldn't be used simultaneously



Specifications

■ RS-422/ 485 Module

| | |
|----------------------|---|
| Number of ports | 2 |
| Interface | Isolated RS-422/485 RS-422: TxD+, TxD-, RxD+, RxD-, RTS+, RTS-, CTS+, CTS- RS-485: Data+, Data- |
| Controller | 16C550 compatible Speed: 115200 bps Max. Data bit: 5, 6, 7, 8 Stop bit: 1, 1.5, 2 Parity: None, Even, Odd, Mark, Space FIFO: Internal 16 bytes |
| Supports Max devices | Supports 32 devices max by each port. For Hardware version 6.7 |
| Connector | 8-Pin RJ-45 |
| 4KV ESD protection | Yes, Contact for each port. |

■ Power Consumption

0.32A @ 5V = 1.6W, +/- 5% For Hardware version 4.0

■ Software

Support interrupt driven software library
Support VxCOM library

■ Environment

| | |
|-----------------------|--------------------------|
| Operating temperature | -25 to 75 °C |
| Storage temperature | -40 to 85 °C |
| Humidity | 5 to 95%, Non-condensing |

■ LED Display

1 LED as Communication Indicator
2 LEDs as Communication(TxD) Indicators
2 LEDs as Communication(Error) Indicators

■ Include cable

CA-RJ0903 x 1

Ordering Information

| | |
|----------|---------------------------------------|
| i-8142 | 2-Port RS-422/485 Module (Blue Cover) |
| i-8142-G | 2-Port RS-422/485 Module (Gray Cover) |

Suggested Accessory

| | |
|----------------|---|
| CA-RJ0903 | 9-Pin Male D-sub to 10-Pin RJ-45 Cable (30cm) |
| CA-RJ1003/1010 | 10-Pin RJ-45 to 10-Wire Cable (30cm/ 1M) |

Pin Assignment



8-pin RJ-45

| Pin | Signal | | Mode |
|-----|---------|-----------------|--------|
| 01 | TxD+/D+ | Transmit Data | Output |
| 02 | TxD-/D- | Transmit Data | Output |
| 03 | RxD+ | Receive Data | Input |
| 04 | RxD- | Receive Data | Input |
| 05 | RTS+ | Request To Send | Output |
| 06 | RTS- | Request To Send | Output |
| 07 | CTS+ | Clear To Send | Input |
| 08 | CTS- | Clear To Send | Input |

Communication Modules

2-port Isolated RS-422/485 Module



i-8142i

i-8142i(G)

Description

- The RS-422 and RS-485 couldn't be used simultaneously
- Self-Tuner Asic inside
- Shared interrupt
- Photo-Isolation : 2500 Vrms
- Intra-module Isolation, Field to Logic : 3000VDC



Specifications

RS-422/ 485 Module

| | |
|----------------------|---|
| Number of ports | 2 |
| Interface | Isolated RS-422/485 RS-422: TxD+, TxD-, RxD+, RxD-, RTS+, RTS-, CTS+, CTS- RS-485: Data+, Data- |
| Controller | 16C550 compatible Speed: 115200 bps Max. Data bit: 5, 6, 7, 8 Stop bit: 1, 1.5, 2 Parity: None, Even, Odd, Mark, Space FIFO: Internal 16 bytes |
| Supports Max devices | Supports 32 devices max by each port. For Hardware version 6.7 |
| Connector | 10-Pin RJ-45 |
| 4KV ESD protection | Yes, Contact for each port. |

Power Consumption

0.48A @ 5V = 2.4W, +/- 5% For Hardware version 6.7

Software

Support interrupt driven software library
Support VxCOM library

Environment

| | |
|-----------------------|--------------------------|
| Operating temperature | -25 to 75 °C |
| Storage temperature | -40 to 85 °C |
| Humidity | 5 to 95%, Non-condensing |

LED Display

1 LED as Communication Indicator
2 LEDs as Communication(TxD) Indicators
2 LEDs as Communication(Error) Indicators

Include cable

CA-RJ0903 x 1

Ordering Information

| | |
|-----------|------------------------------------|
| i-8142i | 2-Port Isolation RS-422/485 Module |
| i-8142i-G | 2-Port Isolation RS-422/485 Module |

Suggested Accessory

| | |
|----------------|---|
| CA-RJ0903 | 9-Pin Male D-sub to 10-Pin RJ-45 Cable (30cm) |
| CA-RJ1003/1010 | 10-Pin RJ-45 to 10-Wire Cable (30cm/ 1M) |

Pin Assignment



10-pin RJ-45

| Pin | Signal | | Mode |
|-----|---------|------------------|--------|
| 01 | GND | Ground | |
| 02 | TxD+/D+ | Transmit Data+ | Output |
| 03 | TxD-/D- | Transmit Data- | Output |
| 04 | RxD+ | Receive Data+ | Input |
| 05 | RxD- | Receive Data- | Input |
| 06 | RTS+ | Request To Send+ | Output |
| 07 | RTS- | Request To Send- | Output |
| 08 | CTS+ | Clear To Send+ | Input |
| 09 | CTS- | Clear To Send- | Input |
| 10 | GND | Ground | |

i-8000 Modules

Communication Modules

4-port RS-422/485 Module



i-8144
i-8144(G)

Description

- Used to expand RS-422/485 ports.
- The RS-422 and RS-485 couldn't be used simultaneously)
- Self-Tuner Asic inside
- Shared interrupt
- Parallel I/O Module



Specifications

■ RS-422/ 485 Module

| | |
|----------------------|---|
| Number of ports | 4 |
| Interface | Isolated RS-422/485 RS-422: TxD+, TxD-, RxD+, RxD-, RTS+, RTS-, CTS+, CTS- RS-485: Data+, Data- |
| Controller | 16C550 compatible Speed: 115200 bps Max. Data bit: 5, 6, 7, 8 Stop bit: 1, 1.5, 2 Parity: None, Even, Odd, Mark, Space FIFO: Internal 16 bytes |
| Supports Max devices | Supports 32 devices max by each port. For Hardware version 4.2 |
| Connector | 10-Pin RJ-45 |
| 4KV ESD protection | Yes, Contact for each port. |

■ Power Consumption

0.38A @ 5V =1.9W, +/- 5% For Hardware version 4.2

■ Software

Support interrupt driven software library
Support VxCOM library

■ Environment

| | |
|-----------------------|--------------------------|
| Operating temperature | -25 to 75 °C |
| Storage temperature | -40 to 85 °C |
| Humidity | 5 to 95%, Non-condensing |

■ LED Display

1 LED as Communication Indicator
4 LEDs as Communication(TxD) Indicators
4 LEDs as Communication(Error) Indicators

■ Include cable

CA-RJ0903 x 1

Ordering Information

| | |
|--------------|---------------------------------------|
| i-8144/ CR | 4-Port RS-422/485 Module (Blue, ROHS) |
| i-8144-G/ CR | 4-Port RS-422/485 Module (Gray, ROHS) |

Suggested Accessory

| | |
|----------------|---|
| CA-RJ0903 | 9-Pin Male D-sub to 10-Pin RJ-45 Cable (30cm) |
| CA-RJ1003/1010 | 10-Pin RJ-45 to 10-Wire Cable (30cm/ 1M) |

Pin Assignment



10-pin RJ-45

| Pin | Signal | | Mode |
|-----|---------|------------------|--------|
| 01 | GND | Ground | |
| 02 | TxD+/D+ | Transmit Data+ | Output |
| 03 | TxD-/D- | Transmit Data- | Output |
| 04 | RxD+ | Receive Data+ | Input |
| 05 | RxD- | Receive Data- | Input |
| 06 | RTS+ | Request To Send+ | Output |
| 07 | RTS- | Request To Send- | Output |
| 08 | CTS+ | Clear To Send+ | Input |
| 09 | CTS- | Clear To Send- | Input |
| 10 | GND | Ground | |

Communication Modules

2-port FRnet module



i-8172

i-8172(G)

Description

- Used to expand FRnet ports



Functional Description

The ICPDAS WinCon-8000, LinCon-8000 and i- 8000 series modules are all Programmable Automation Controller (PAC) that use an i-8172 FRnet communication module to implement an FRnet network. The i-8172 is an isolated FRnet communication controllers. The i-8172 has two FRnet ports, each FRnet port can control a maximum of 16 communication nodes, numbered from 0 to 15. Each single node of the remote I/O module can control a maximum of 16 DI/DO channels. In other words, each FRnet port can control a maximum of 128 DI and 128 DO channels.

Applications

- Industrial Automation
- Remote I/O control
- Building Automation
- Parking Lot Management

Specifications

- Communication speed:** 250Kbps
- Cyclic Scan time:**
128 input/128 output points@2.88 ms
- Communication distance:** 400m max
- Wire cable:** (shielded) Twisted-pair cable

General Specifications

- Power consumption:** 1.25W Max.
- Operating temperature:** -25°C ~ +75°C
- Operating humidity:** 10% ~ 90% RH, non-condensing
- Storage temperature:** -30°C ~ +85°C
- Storage humidity:** 5% ~ 95% RH, non-condensing

Ordering Information

| | |
|--------|---------------------|
| i-8172 | 2-port FRnet module |
|--------|---------------------|

Optional Accessories

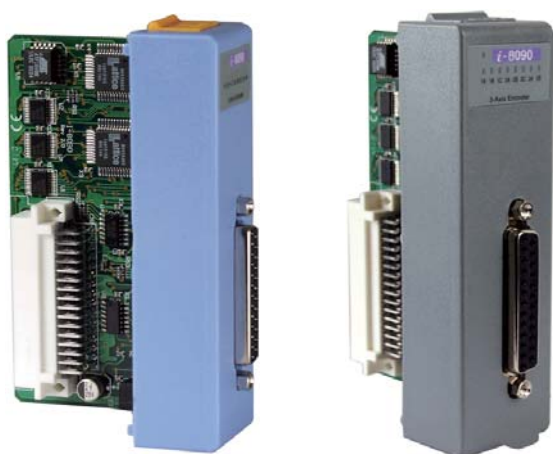
| | |
|----------|--|
| FR-2053T | 16-channel isolated DI module with 20-pin screw terminal connector |
| FR-2057T | 16-channel isolated DO module with 20-pin screw terminal connector |

Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | Port0-A |
| 02 | Port0-B |
| 03 | Port1-A |
| 04 | Port1-B |
| 05 | F.G. |

i-8000 Modules

Motion Modules



i-8090
i-8090(G)

3-axis Encoder Module

Description

- Used to get encoder data
- Parallel I/O Module
- 3-axis, 16-bit Encoder Counter
- 32 bits encoder counter by software



Specifications

3-axis Encoder Module

| | |
|------------------------------|---|
| Maximum counting rate | 1M pulse/sec |
| Differential input | A+, A-, B+, B-, C+, C- |
| Modes | Quadrant counting mode CW/CCW counting mode Pulse/Dir counting mode |
| Optical isolation | 2500V |
| Power consumption | 3.4W |

Ordering Information

| | |
|---------------|--|
| i-8090 | 3-axis Encoder Module |
| Standard Pack | i-8090 x 1, User's Manual x1, CA-PC25M x 1 |

Optional Accessories

| | |
|---------|--|
| DN-25 | I/O Connector Block with DIN-Rail Mounting, 25/9 pin D-sub Connector |
| CA-2520 | 25-pin Male-Male D-sub flat cable, 2M |

Pin Assignment

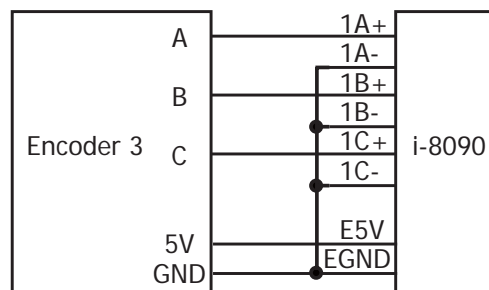
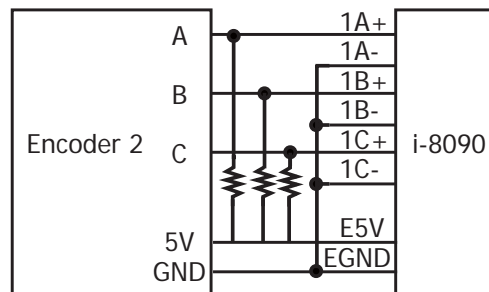
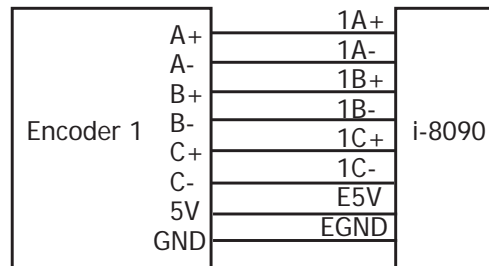
| Name | Terminal No. | Name |
|------|--------------|---------|
| A+ | 01 | 14 A- |
| B+ | 02 | 15 B- |
| C+ | 03 | 16 C- |
| E5V | 04 | 17 EGND |
| 2A+ | 05 | 18 2A- |
| 2B+ | 06 | 19 2B- |
| 2C+ | 07 | 20 2C- |
| E5V | 08 | 21 EGND |
| 3A+ | 09 | 22 3A- |
| 3B+ | 10 | 23 3B- |
| 3C+ | 11 | 24 3C- |
| E5V | 12 | 25 EGND |
| EGND | 13 | |

25-Pin Female D-Sub Connector



DN-25+CA-2520

Wire Connection



Note:

Encode 1 : Differential type encoder
 Encode 2 : Open collector type encoder
 Encode 3 : Single-end type encoder

i-8000 Modules

Motion Modules

2-axis Stepping/Servo Motor Control Card



i-8091
i-8091(G)

Description

- Used to drive motors
- Parallel I/O Module
- 2-axis independent
- Simultaneous stepping motor control
- Servo motor control (pulse input type)
- 2-Axis linear ; 2-Axis circular interpolation



Specifications

| 2-axis Stepping/Servo Motor Control Card | |
|---|--------------------------|
| Maximum pulse rate | 1M pulse/sec |
| Maximum step counts | 2 ³² -1 steps |
| Output pulse modes | CW/CCW pulse/direction |
| Optical isolation | 2500 Vrms |
| Power consumption | 3.9W |
| <ul style="list-style-type: none"> DOS Driver Embedded CPU Command type interface Automatic trapezoidal acceleration/deceleration Output polarity can be programmable 3 optical isolated digital inputs per axis for limit switches programmable limit switch initial condition as normal open (N.O.) or normal close (N.C.) | |

Pin Assignment

| Name | Terminal No. | Name |
|-----------|--------------|-----------|
| +5V | 01 | +5V |
| CW_PULSE1 | 02 | CW_PULSE2 |
| CCW_DIR1 | 03 | CCW_DIR2 |
| HOLD1 | 04 | HOLD2 |
| GND | 05 | GND |
| EXT_VCC | 06 | EXT_VCC |
| /ORG1 | 07 | /ORG2 |
| /LS11 | 08 | /LS21 |
| NO USE | 09 | NO USE |
| NOUSE | 10 | NOUSE |
| /LS14 | 11 | /LS24 |
| /EMG | 12 | EXT_GND |
| EXT_GND | 13 | |

25-Pin Female D-Sub Connector

Ordering Information

| | |
|---------------|--|
| i-8091 | 2-axis Stepping/Servo Motor Control Card |
| Standard Pack | i-8091 x 1, User's Manual x1, CA-PC25M x 1 |

Optional Accessories

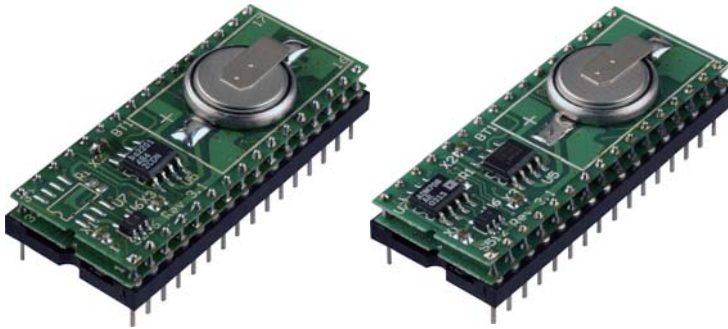
| | |
|---------|--|
| DN-25 | I/O Connector Block with DIN-Rail Mounting, 25/9 pin D-sub Connector |
| CA-2520 | 25-pin Male-Male D-sub flat cable, 2M |



DN-25+CA-2520

Memory

256/512K battery backup SRAM Module for all i-8000 Embedded Controller



S256
S512

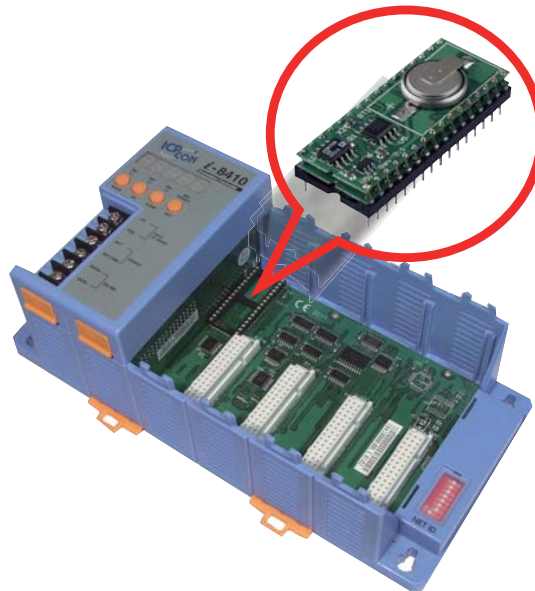
Description

- Battery backup SRAM module



Specifications

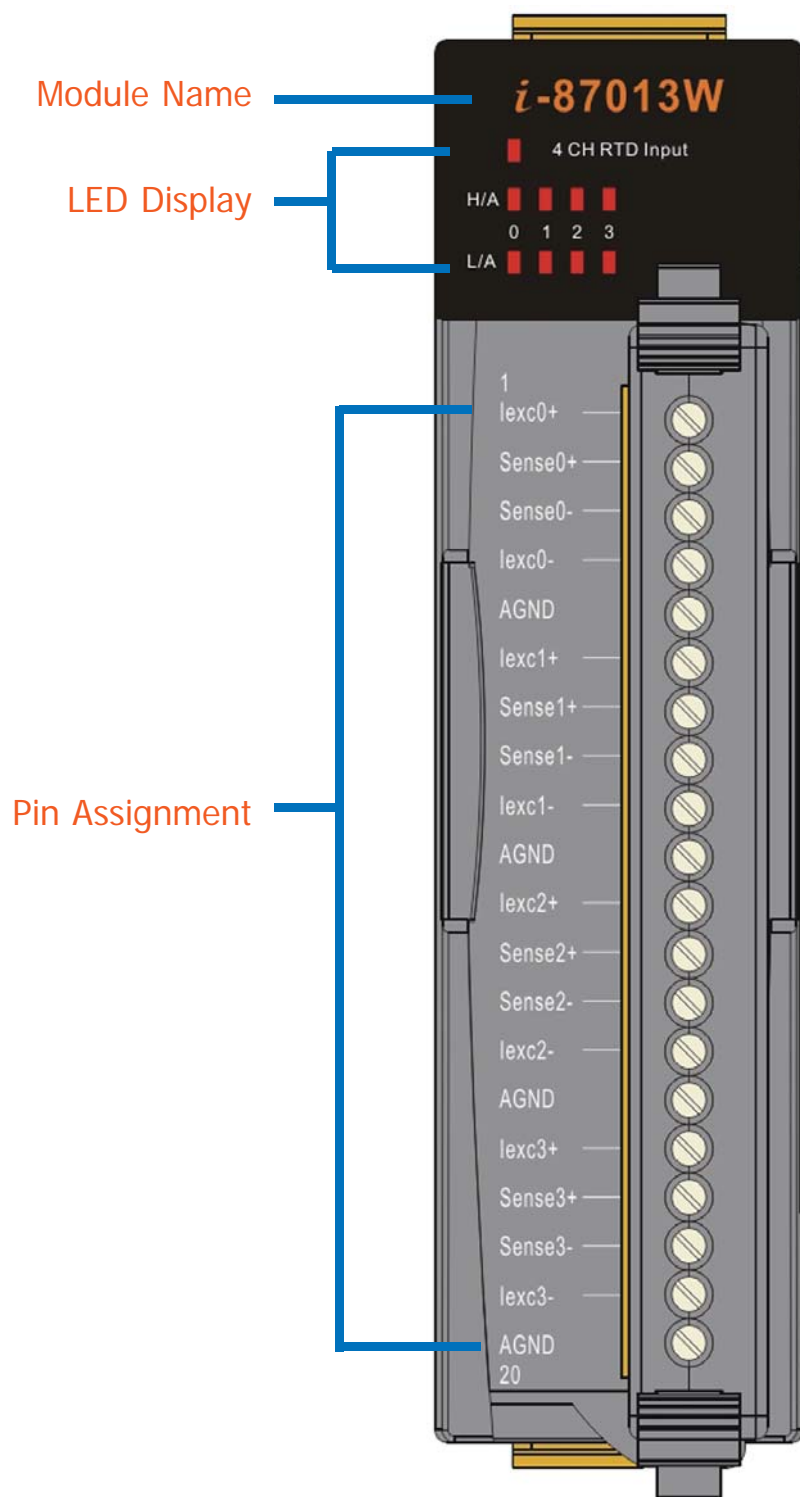
- S256 for 256K bytes battery backup, S512 for 512K bytes battery backup
- The S256/S512 can provide 10,000 hours backup time
- Operating temperature: +0°C to +70°C



Ordering Information

| | |
|------|---------------------------------|
| S256 | 256K battery backup SRAM module |
| S512 | 512K battery backup SRAM module |

i-87K Introduction



i-87K Introduction

Introduction

ICP DAS i-87K serial cartridge based I/O modules offer the ultimate in cost effective flexibility, when it comes to a localized COTS data acquisition program.

The ICP DAS i-87K COTS (Commercial-Off-The-Shelf) cartridge based I/O program offers a multitude of digital and analog configurations, which are communicable via an proprietary backplane in all of ICP DAS's W-8000 & 87K series rack mount controllers and expansion racks !



The communication interface is serial bus (RS-485) and the protocol is DCON. It can be plug in WinCon, LinCon, I-8000 controllers and I-87K, RF-87K I/O expansion units.

Note: For industrial applications, we recommend to choose i-87K modules.

Common Features

Isolation Voltage : 3000V DC

Dimensions : 31 x 81 x 114 (W x D x H)

Power :

- +10V ~ +30V DC
- Power reverse protection, over-voltage brown-out protection

Environment :

- Operating temperature : -25 to 75 °C
- Storage temperature : -40 to 85 °C
- Humidity : 5 to 95%, non-condensing

LED Display : 1 LED as Power/ Communication indicator

■ Analog Input

Page 4-6~11

| Modules | | i-87005W | i-87013W | i-87015 | i-87015P | i-87016W |
|--|-------------------------|--------------------|---------------|----------------|----------------|--|
| Analog Input | Resolution | 16 bit | 16 bit | 16 bit | 16 bit | 16 bit |
| | Input channel | 8 diff. | 4 diff. | 7 diff. | 7 diff. | 2 diff. |
| | Sampling rate | 8 Hz (total) | 10 Hz (total) | 12 Hz (total) | 12 Hz (total) | 10 Hz |
| | Voltage input | - | - | - | - | +/-15mV, +/-50mV +/-100mV, +/-500mV +/-1V, +/-2.5V |
| | Current input | - | - | - | - | +/-20mA |
| | Sensor input | Thermistor(2-wire) | Pt/ Ni-RTD | Pt/ Ni/ Cu-RTD | Pt/ Ni/ Cu-RTD | - |
| | Input linear scaling | - | - | - | - | Yes |
| DO | Digital Output Channels | 8 (open collector) | - | - | - | - |
| Isolation Voltage | | 3000V | 3000V | 3000V | 3000V | 3000V |
| Dual Watchdog Timer | | Yes | Yes | Yes | Yes | Yes |
| ESD Protection | | - | Yes | Yes | Yes | - |
| EFT Protection | | - | Yes | Yes | Yes | - |
| 3-wire RTD lead resistance elimination | | - | Yes | - | Yes | - |
| Open Wire Detection | | Yes | Yes | Yes | Yes | - |
| Power Consumption | | 1.0W | 0.8W | 1.0W | 1.0W | Maximum : 3W |

Note: i-87005W, i-87016W Will be available

Page 4-12~17

| Modules | | i-87017W-A5 | i-87017R | i-87017RC |
|---------------------|---|-----------------|---|---------------------------|
| Analog Input | Resolution | 12/16 bit | 12/16 bit | 12/16 bit |
| | Input channel | 8 diff. | 8 diff. | 8 diff. |
| | Sampling rate (Total) | 60/10Hz | 60/10Hz | 60/10Hz |
| | Voltage input | +/-50V, +/-150V | +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V | - |
| | Current input * Need external 125Ω resistors | - | +/-20mA (*) | +/-20mA, 0-20mA 4-20mA |
| Isolation Voltage | | 3000V | 3000V | 3000V |
| Open Wire Detection | | +/-200V | +/-240V | (Note) |
| Dual Watchdog Timer | | Yes | Yes | Yes |
| ESD Protection | | Yes | Yes | Yes |
| EFT Protection | | Yes | Yes | Yes |
| Power Consumption | | 1.3W | 1.3W | 1.3W |

Note: i-87017RC support common voltage +/-200V

Analog Input

Page 4-18~23

| Modules | | i-87018R | i-87018Z | i-87019R |
|-------------------------|-----------------------|--|--|--|
| Analog Input | Resolution | 16 bit | 16 bit | 16 bit |
| | Input channel | 8 diff. | 10 diff. | 8 diff. |
| | Sampling rate (Total) | 10Hz | 10Hz | 8Hz |
| | Voltage input | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V | +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V | +/- 15mV, +/- 50mV, +/- 100mV, +/- 150mV, +/- 500mV, +/- 1V, +/- 2.5V, +/- 5V, +/- 10V |
| | Current input | +/-20mA | +/-20mA, 0~20mA, 4~20mA | +/-20mA |
| Sensor input | | J.K.T.E.R.S.B.N.C.L.M.L2 thermocouple | J.K.T.E.R.S.B.N.C.L.M.L2 thermocouple | J.K.T.E.R.S.B.N.C.L.M.L2 thermocouple |
| Isolation Voltage | | 3000V | 3000V | 3000V |
| Over Voltage Protection | | +/-240V | +/-240V | +/-240V |
| Dual Watchdog Timer | | Yes | Yes | Yes |
| ESD Protection | | Yes | Yes | Yes |
| EFT Protection | | Yes | Yes | Yes |
| Open Wire Detection | | Yes | Yes | Yes |
| Power Consumption | | 1.2W | 1.3W | 1.1W |

Analog Output

Page 4-24~25

| Modules | | i-87024W | i-87028C |
|---|--|----------------------------------|----------------|
| Analog Output | Resolution | 14 bit | 12 bit |
| | Output channels ** channel to channel isolation | 4 | 8 (**) |
| | Voltage output | +/-10V, 0-10V +/-5V, 0-5V | - |
| | Current output | 0-20mA, 4-20mA | 0-20mA, 4-20mA |
| Safe Value (When the Host communications fail) | | Yes | Yes |
| Power-on Preset Value | | Yes | Yes |
| Dual Watchdog Timer | | Yes | Yes |
| ESD Protection | | Yes | Yes |
| EFT Protection | | Yes | Yes |
| Power Consumption | | Typical : 1.3W Maximum : 2.8W | 2.6W |

Note: i-87028C Will be available

Digital Input

Page 4-26~33

| Modules | | i-87040W | i-87046W | i-87051W | i-87052W |
|---------------|-------------------|--------------|-----------|-----------|--------------|
| Digital Input | Channels | 32 | 16 | 16 | 8 |
| | Input type | Sink/ Source | Sink | Sink | Sink/ Source |
| | Isolation | Yes | - | - | Yes |
| | Input impedance | 3K ohms | - | - | 3K ohms |
| | Voltage level | ON | +3.5V~30V | +1 Max. | +3.5V~30V |
| | | OFF | +1 Max. | +3.5V~30V | +1 Max. |
| | Counter | Yes | Yes | Yes | Yes |
| | Power consumption | 0.7W | 1W | 0.5W | 0.3W |

Page 4-34~41

| Modules | | i-87053W | i-87053W-A5 | i-87058W | i-87059W |
|---------------|-------------------|-----------|-------------------------------|-----------|-----------|
| Digital Input | Channels | 16 | 16 | 8 | 8 |
| | Input type | Dry+Wet | Dry+Wet | AC input | AC input |
| | Isolation | Yes | Yes | Yes | Yes |
| | Input impedance | 3K ohms | 50K ohms | 68K ohms | 10K Ohms |
| | Voltage level | ON | Dry : GND Wet : +5V~30V | 80~250VAC | 10~80 VAC |
| | | OFF | Dry : Open Wet : +3.5V max | 20VAC max | 3 VAC max |
| | Counter | Yes | Yes | Yes | Yes |
| | Power consumption | 0.8W max. | 0.9W max. | 0.3W | 0.3W |

Digital Input & Output

Page 4-42~47

| Modules | | i-87054W | i-87055W | i-87063W |
|-------------------|-------------------|--------------|-------------|---|
| Digital Input | Channels | 8 | 8 | 4 |
| | Input type | Sink/ Source | Sink | Sink |
| | Isolation | Yes | - | Yes |
| | Input impedance | 10K ohms | - | 3K ohms |
| | Voltage level | ON | +3.5V~30V | +3.5V~30V |
| | | OFF | +1 Max. | +1 Max. |
| | Counter | Yes | Yes | Yes |
| Digital Output | Channels | 8 | 8 | 4 |
| | Output type | Sink | 8 bit | Power Relay (Form C) |
| | Isolation | Yes | - | Yes |
| | Max. load current | 700mA | 100mA | 3mA |
| | Max. load voltage | 5 to 50 Vdc | 5 to 30 Vdc | 5A(NO)/3A(NC)@30VDC 5A(NO)/3A(NC)@227VAC |
| Power consumption | | 0.8W | 0.8W | 1.5W |

Digital Output

Page 4-48~53

| Modules | | i-87041W | i-87057W | i-87064W | i-87065W |
|-------------------|-------------------|-------------|-------------|----------------------|-----------------|
| Digital Output | Channels | 32 | 16 | 8 | 8 |
| | Output type | Sink | Sink | Power Relay (Form A) | AC SSR (Form A) |
| | Isolation | Yes | Yes | - | - |
| | Max. load current | 100mA | 100mA | 5Arms | 1Arms |
| | Max. load voltage | 5 to 30 Vdc | 5 to 30 Vdc | 0~250VAC 0~30VDC | 24 to 256Vrms |
| Power consumption | | 1.6W | 1W | 1.5W | 0.6W |

Page 4-54~61

| Modules | | i-87066W | i-87068W | i-87069W |
|-------------------|-------------------|-----------------|---|-------------------------|
| Digital Output | Channels | 8 | 8 | 8 |
| | Output type | DC SSR (Form A) | Power Relay (4FormA+4FormC) | PhotoMOS Relay (Form A) |
| | Max. load current | 1Arms | 5Arms | 0.13A max. |
| | Max. load voltage | 3 to 30VDC | FormA: 8A@28VDC, 8A@250VAC FormC: 5A(NO)/3A(NC)@30VDC 5A(NO)/3A(NC)@277VAC | 350V max. at DC/AC |
| Power consumption | | 0.6W | 2.5W | 0.5W |

Counter/Frequency

Page 4-62

| Modules | | i-87082W |
|---------------------------|---------------------|---|
| Counter & Frequency input | Channels | 2 |
| | Mode | Isolated or Non-isolated |
| | Input frequency | 1Hz~100K Hz |
| | Isolated input | On Voltage Level : +3.5 to 30V Off Voltage Level : +1V max Intra-module Isolation, Field to Logic : 3750Vrms |
| | Non-isolation input | On Voltage Level : 0 to +5V (Default >2.4V) Off Voltage Level : 0 to +5V (Default <0.8V) Threshold Voltage Level : Programmable |
| | Max.Counts | 32-bits (4,294,967,295) |
| Digital Output | Output channels | 2 |
| | Output type | Non-isolated Open-collector(Sink) |
| | Max. load current | 30 mA/ channel |
| | Max. load voltage | 5 ~ 30VDC |
| Power consumption | | 0.5W |

i-87K AI Modules

Analog Input - RTD

4-channel RTD Input Module



i-87013W

Description

- i-87013W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

Analog Input

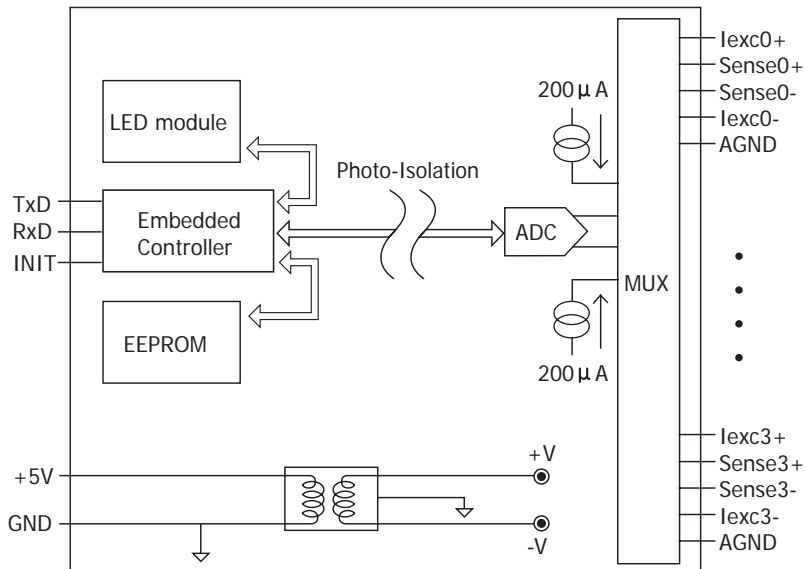
| | |
|--|---|
| Input channels | 4 |
| Input type | Pt, Ni |
| Wire connection | 2/3/4 Wire RTD |
| Resolution | 16-bit |
| Sampling rate | 10 Samples/ sec (Total) |
| -3dB bandwidth | 15.7 HZ |
| Accuracy | +/- 0.1% of FSR |
| Span drift | +/- 25 μ V/ $^{\circ}$ C |
| Zero drift | +/- 0.5 μ V/ $^{\circ}$ C |
| Normal mode rejection | 100 dB |
| Common mode rejection | 150 dB |
| Open wire detection | Yes |
| ESD protection | \pm 4kV Contact Discharge and \pm 8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, Field to Logic : 3000Vdc | |
| LED Display | |
| 1 LED as Power/ Communication Indicator | |
| 8 LEDs as High/ Low Alarm Signals | |
| Power | |
| Power consumption | Maximum : 0.8W |

Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | lexc0+ |
| 02 | Sense0+ |
| 03 | Sense0- |
| 04 | lexc0- |
| 05 | AGND |
| 06 | lexc1+ |
| 07 | Sense1+ |
| 08 | Sense1- |
| 09 | lexc1- |
| 10 | AGND |
| 11 | lexc2+ |
| 12 | Sense2+ |
| 13 | Sense2- |
| 14 | lexc2- |
| 15 | AGND |
| 16 | lexc3+ |
| 17 | Sense3+ |
| 18 | Sense3- |
| 19 | lexc3- |
| 20 | AGND |

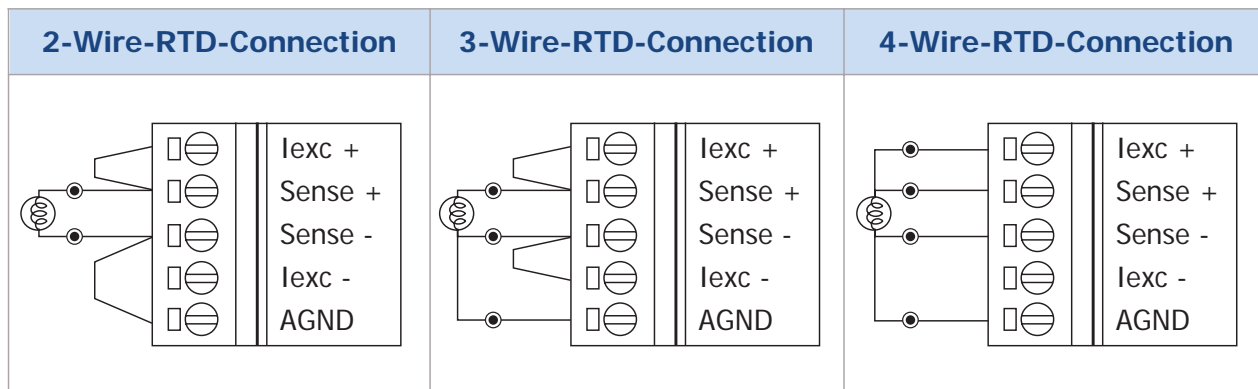
Internal I/O Structure

RTD Temperature Range



| Type Code | Type | Range °C |
|-----------|-----------------------------------|----------|
| 20 | Platinum 100, $\alpha = 0.00385$ | -100~100 |
| 21 | Platinum 100, $\alpha = 0.00385$ | 0~100 |
| 22 | Platinum 100, $\alpha = 0.00385$ | 0~200 |
| 23 | Platinum 100, $\alpha = 0.00385$ | 0~600 |
| 24 | Platinum 100, $\alpha = 0.003916$ | -100~100 |
| 25 | Platinum 100, $\alpha = 0.003916$ | 0~100 |
| 26 | Platinum 100, $\alpha = 0.003916$ | 0~200 |
| 27 | Platinum 100, $\alpha = 0.003916$ | 0~600 |
| 28 | Nickel 120 | -80~100 |
| 29 | Nickel 120 | 0~100 |
| 2A | Platinum 1000, $\alpha = 0.00385$ | -200~600 |

Wire Connection



Ordering Information

i-87013W-G CR

4-channel RTD Input Module (RoHS)



i-87015

Description

- i-87015 has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

Pin Assignment

Analog Input

| | |
|-----------------------|---|
| Input channels | 7 Differential |
| Input type | Pt100, Pt1000, Ni120, Cu100, Cu1000 |
| Resolution | 16-bit |
| Sampling rate | 12 Samples/ sec (Total) |
| Input impedance | >1M Ohms |
| Accuracy | +/- 0.05% of FSR |
| Span drift | +/- 20 μ V/ $^{\circ}$ C |
| Zero drift | +/- 0.5 μ V/ $^{\circ}$ C |
| Normal mode rejection | 100 dB |
| Common mode rejection | 150 dB |
| Open wire detection | Yes |
| ESD protection | \pm 4kV Contact Discharge and \pm 8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |

Individual channel configurable : Yes

Intra-module isolation, field to logic : 3000 VDC

LED Display

1 LED as Power/ Communication Indicator
14 LEDs as High/ Low Alarm Signals

Power

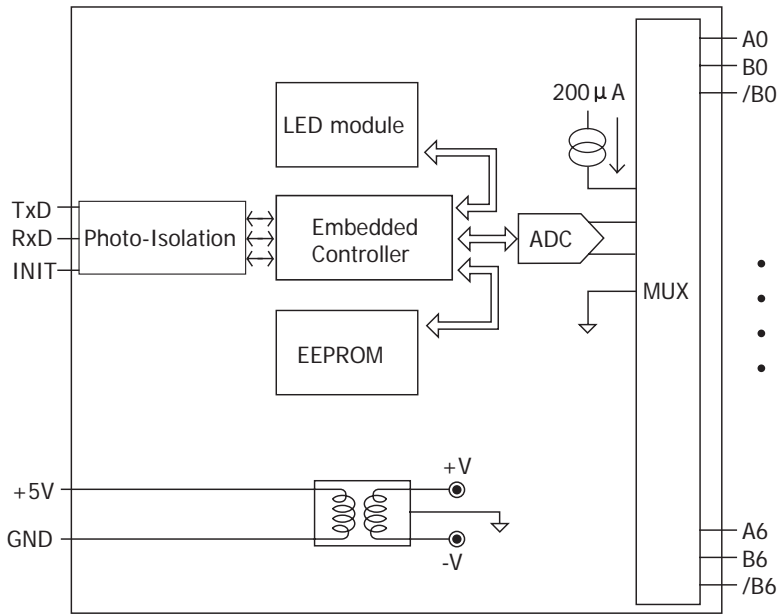
Power consumption Maximum : 1.0 W

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | A0 |
| 02 | B0 |
| 03 | /B0 |
| 04 | A1 |
| 05 | B1 |
| 06 | /B1 |
| 07 | A2 |
| 08 | B2 |
| 09 | /B2 |
| 10 | A3 |
| 11 | B3 |
| 12 | /B3 |
| 13 | A4 |
| 14 | B4 |
| 15 | /B4 |
| 16 | A5 |
| 17 | B5 |
| 18 | /B5 |
| 19 | A6 |
| 20 | B6 |
| 21 | /B6 |

NOTE: We recommend to choose i-87015P for long distance RTD measurement.

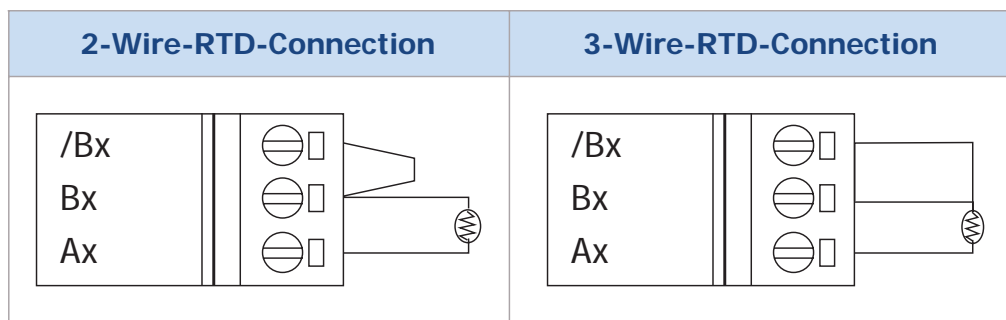
Internal I/O Structure

RTD Temperature Range



| Type Code | Type | Range °C |
|-----------|------------------------------------|-----------|
| 20 | Platinum 100, $\alpha = 0.00385$ | -100~100 |
| 21 | Platinum 100, $\alpha = 0.00385$ | 0~100 |
| 22 | Platinum 100, $\alpha = 0.00385$ | 0~200 |
| 23 | Platinum 100, $\alpha = 0.00385$ | 0~600 |
| 24 | Platinum 100, $\alpha = 0.003916$ | -100~100 |
| 25 | Platinum 100, $\alpha = 0.003916$ | 0~100 |
| 26 | Platinum 100, $\alpha = 0.003916$ | 0~200 |
| 27 | Platinum 100, $\alpha = 0.003916$ | 0~600 |
| 28 | Nickel 120 | -80~100 |
| 29 | Nickel 120 | 0~100 |
| 2A | Platinum 1000, $\alpha = 0.00385$ | -200~600 |
| 2B | Cu 100 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2C | Cu 100 at 25°C, $\alpha = 0.00427$ | 0~200 |
| 2D | Cu 1000 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2E | PT 100, $\alpha = 0.00385$ | -200~200 |
| 2F | PT 100, $\alpha = 0.003916$ | -200~200 |
| 80 | PT 100, $\alpha = 0.00385$ | -200~600 |
| 81 | PT 100, $\alpha = 0.003916$ | -200~600 |

Wire Connection



Ordering Information

i-87015-G CR

7-channel RTD Input Module (Gray Cover) (RoHS)

i-87K AI Modules



Analog Input - RTD

7-channel RTD Input Module with
3-wire RTD lead resistance elimination



Description

- i-87015P has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



i-87015P

Specifications

Analog Input

| | |
|--|--|
| Input channels | 7 Differential |
| Input type | Pt100, Pt1000, Ni120, Cu100, Cu1000 |
| Resolution | 16-bit |
| Sampling rate | 12 Samples/ sec (Total) |
| Input impedance | >1M Ohms |
| Accuracy | +/- 0.05% of FSR |
| -3dB Bandwidth | 15.7Hz |
| Span drift | +/- 20μV/ °C |
| Zero drift | +/- 0.5 μV/ °C |
| Normal mode rejection | 100 dB |
| Common mode rejection | 150 dB |
| Open wire detection | Yes |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Individual channel configurable : | Yes |
| 3-wire RTD lead resistance elimination : | Yes |
| Intra-module isolation, field to logic : | 3000 VDC |

LED Display

1 LED as Power/ Communication Indicator
14 LEDs as High/ Low Alarm Signals

Power

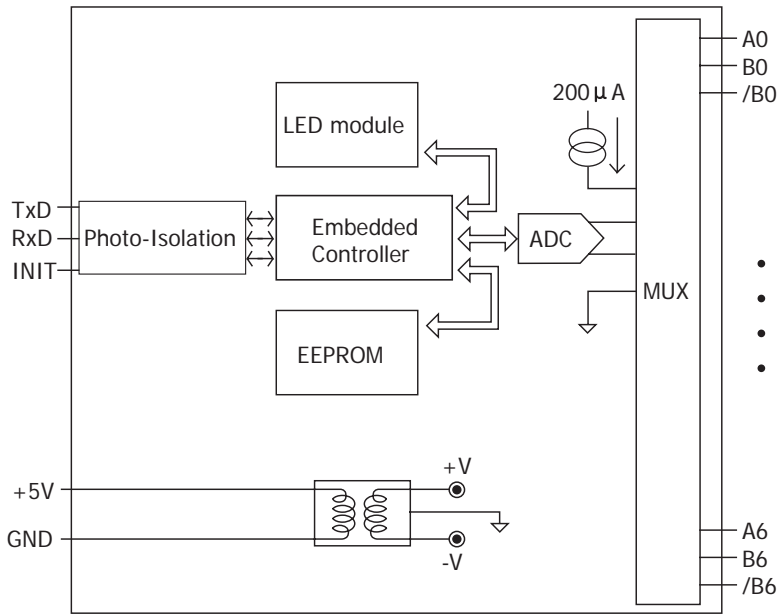
Power consumption Maximum : 1.0 W

Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | A0 |
| 02 | B0 |
| 03 | /B0 |
| 04 | A1 |
| 05 | B1 |
| 06 | /B1 |
| 07 | A2 |
| 08 | B2 |
| 09 | /B2 |
| 10 | A3 |
| 11 | B3 |
| 12 | /B3 |
| 13 | A4 |
| 14 | B4 |
| 15 | /B4 |
| 16 | A5 |
| 17 | B5 |
| 18 | /B5 |
| 19 | A6 |
| 20 | B6 |
| 21 | /B6 |

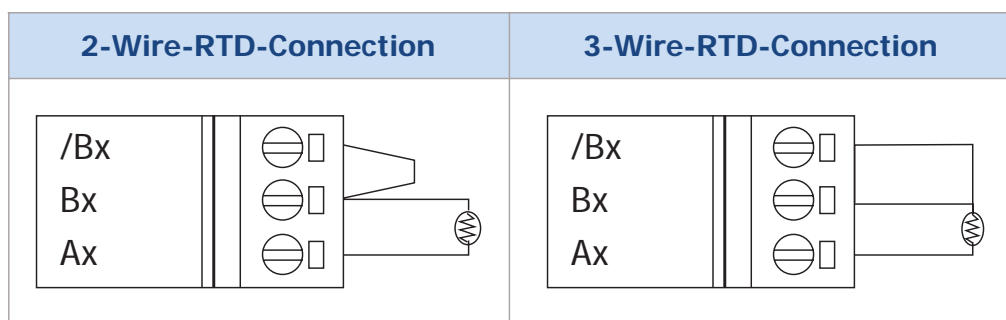
Internal I/O Structure

RTD Temperature Range



| Type Code | Type | Range °C |
|-----------|------------------------------------|-----------|
| 20 | Platinum 100, $\alpha = 0.00385$ | -100~100 |
| 21 | Platinum 100, $\alpha = 0.00385$ | 0~100 |
| 22 | Platinum 100, $\alpha = 0.00385$ | 0~200 |
| 23 | Platinum 100, $\alpha = 0.00385$ | 0~600 |
| 24 | Platinum 100, $\alpha = 0.003916$ | -100~100 |
| 25 | Platinum 100, $\alpha = 0.003916$ | 0~100 |
| 26 | Platinum 100, $\alpha = 0.003916$ | 0~200 |
| 27 | Platinum 100, $\alpha = 0.003916$ | 0~600 |
| 28 | Nickel 120 | -80~100 |
| 29 | Nickel 120 | 0~100 |
| 2A | Platinum 1000, $\alpha = 0.00385$ | -200~600 |
| 2B | Cu 100 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2C | Cu 100 at 25°C, $\alpha = 0.00427$ | 0~200 |
| 2D | Cu 1000 at 0°C, $\alpha = 0.00421$ | -20 ~ 150 |
| 2E | PT 100, $\alpha = 0.00385$ | -200~200 |
| 2F | PT 100, $\alpha = 0.003916$ | -200~200 |
| 80 | PT 100, $\alpha = 0.00385$ | -200~600 |
| 81 | PT 100, $\alpha = 0.003916$ | -200~600 |

Wire Connection



Ordering Information

i-87015P-G CR

7-channel RTD Input Module with 3-wire RTD lead resistance elimination

8-channel High Voltage Input Module



i-87017W-A5

Description

- i-87017W-A5 has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

Analog Input

| | | | |
|------------------------|---|--------------------------------|---|
| Input channels | 8 Differential | Input type | +/-50V, +/-150V |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 50 Sample/ sec (Total) | Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.25% of FSR |
| Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit | -3dB bandwidth | 15.7Hz |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 86 dB |
| Span drift | +/- 25 μV/ °C | Normal mode rejection | 100 dB |
| Input impedance | 290K Ohms | Over voltage protection | -200V to +200V |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |

Intra-module isolation, Field to Logic : 3000 VDC

LED Display

1 LED as Power/ Communication Indicator

Power

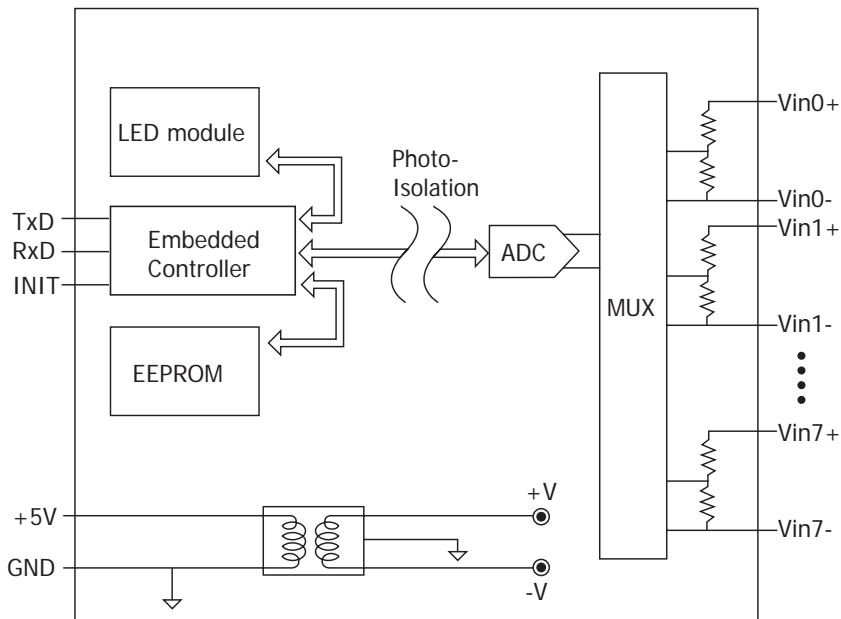
Power consumption Maximum : 1.3W

Ordering Information

| | |
|---------------|-------------------------------------|
| i-87017W-A5-G | 8-channel High Voltage Input Module |
|---------------|-------------------------------------|

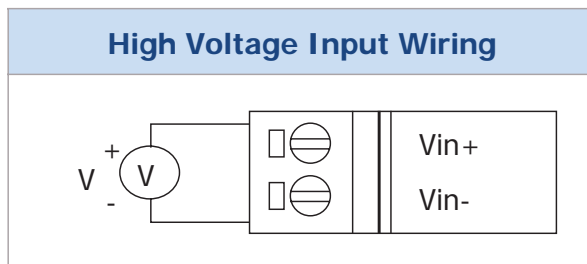
Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | Vin0+ |
| 02 | Vin0- |
| 03 | Vin1+ |
| 04 | Vin1- |
| 05 | Vin2+ |
| 06 | Vin2- |
| 07 | Vin3+ |
| 08 | Vin3- |
| 09 | Vin4+ |
| 10 | Vin4- |
| 11 | Vin5+ |
| 12 | Vin5- |
| 13 | Vin6+ |
| 14 | Vin6- |
| 15 | Vin7+ |
| 16 | Vin7- |
| 17 | AGND |
| 18 | AGND |
| 19 | FD |
| 20 | FD |

Wire Connection



| TYPE | SIGNAL |
|------|--------|
| 1B | ±150V |
| 1C | ±50V |

i-87K AI Modules



i-87017R

Analog Input

8-channel Analog Input Module
with High Over Voltage Protection



Description

- i-87017R has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

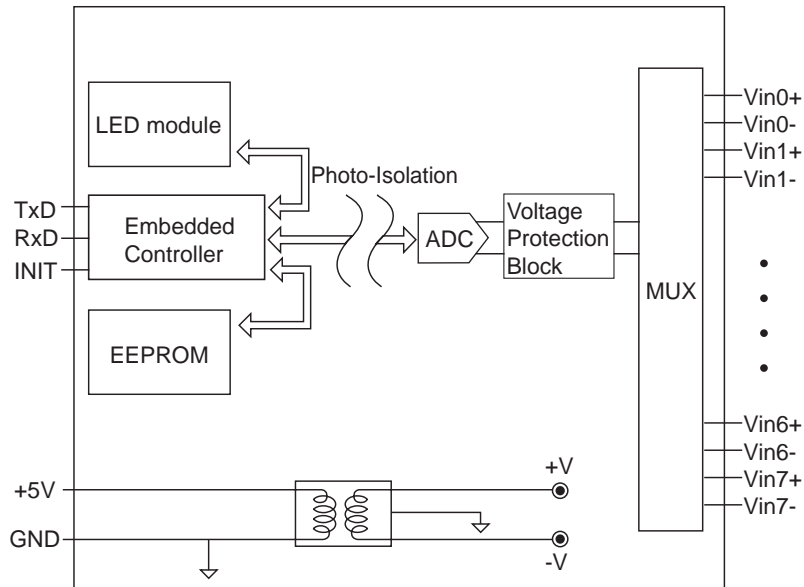
| ■ Analog Input | | | |
|---|---|--------------------------------|--|
| Input channels | 8 Differential | Over voltage protection | 240Vrms |
| Input type | +/- 10V, +/- 5V, +/- 1V, +/- 500mV, +/- 150mV, -20mA ~ +20mA | Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total) | Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.5% of FSR |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 86 dB |
| Span drift | +/- 25 μV/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 15.7Hz | Input impedance | >1M Ohms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, Field to Logic : 3000 VDC | | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 16 LEDs as High/ Low Alarm Signals | | Power consumption | Maximum : 1.3W |

Ordering Information

| | |
|---------------|--------------------------------------|
| i-87017R-G CR | 8-channel Analog Input Module (RoHS) |
|---------------|--------------------------------------|

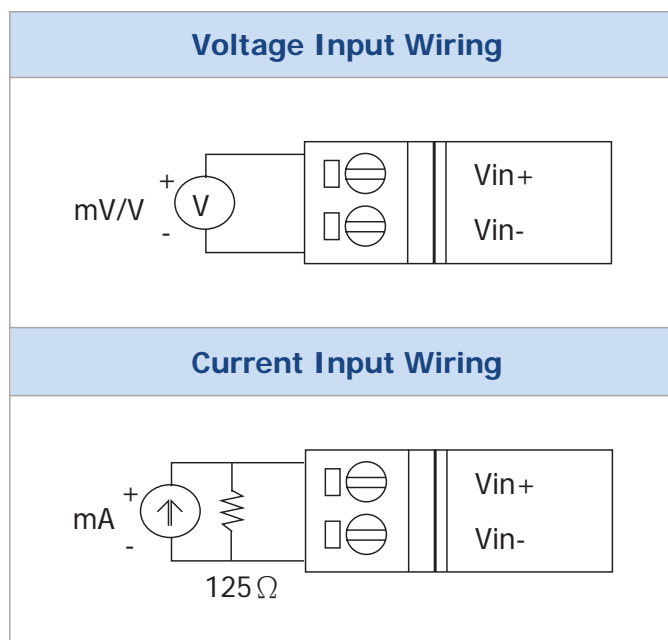
Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | Vin0+ |
| 02 | Vin0- |
| 03 | Vin1+ |
| 04 | Vin1- |
| 05 | Vin2+ |
| 06 | Vin2- |
| 07 | Vin3+ |
| 08 | Vin3- |
| 09 | Vin4+ |
| 10 | Vin4- |
| 11 | Vin5+ |
| 12 | Vin5- |
| 13 | Vin6+ |
| 14 | Vin6- |
| 15 | Vin7+ |
| 16 | Vin7- |

Wire Connection



| TYPE | SIGNAL |
|------|--------|
| 08 | ±10V |
| 09 | ±50V |
| 0A | ±1V |
| 0B | ±500mV |
| 0C | ±150mV |
| 0D | ±20mA |

Note: When connecting to a current source, an optional external 125Ω resistor is required.



i-87017RC

Description

- i-87017RC has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

Analog Input

| | | | |
|--|---|------------------------------|--|
| Input channels | 8 Differential | Common voltage | -200V to +200V |
| Input type | 0 ~ +20mA, +4 ~ +20mA, -20mA ~ +20mA | Resolution | Normal Mode : 16-bit, Fast Mode : 12-bit |
| Sampling rate | Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total) | Accuracy | Normal Mode : +/- 0.1% of FSR Fast Mode : +/- 0.5% of FSR |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 86 dB |
| Span drift | +/- 25 μV/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 15.7Hz | Open wire detection | Yes |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, Field to Logic : 3000 VDC | | Input impedance | 125 Ohms |

LED Display

1 LED as Power/ Communication Indicator
16 LEDs as High/ Low Alarm Signals

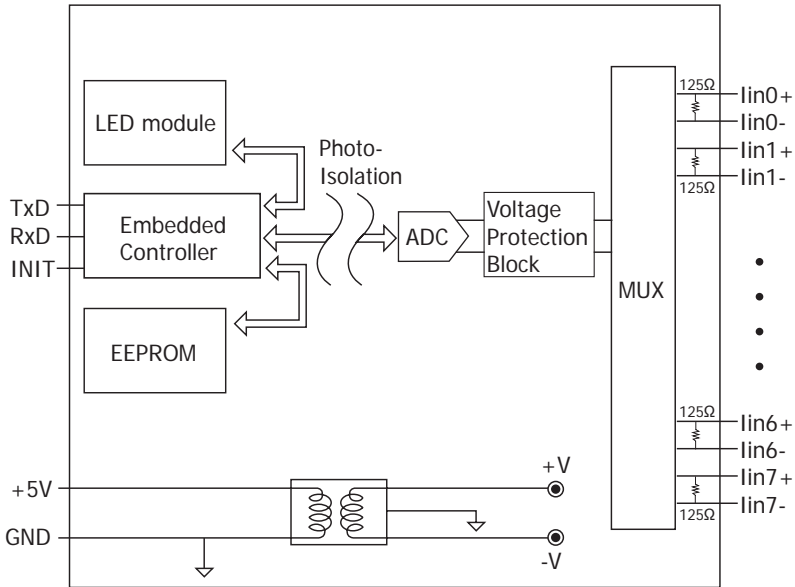
Power

Power consumption Maximum : 1.3W

Ordering Information

| | |
|----------------|---------------------------------------|
| i-87017RC-G CR | 8-channel Current Input Module (RoHS) |
|----------------|---------------------------------------|

Internal I/O Structure

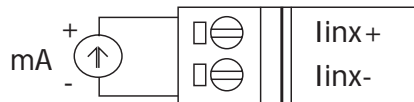


Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | lin0+ |
| 02 | lin0- |
| 03 | lin1+ |
| 04 | lin1- |
| 05 | lin2+ |
| 06 | lin2- |
| 07 | lin3+ |
| 08 | lin3- |
| 09 | lin4+ |
| 10 | lin4- |
| 11 | lin5+ |
| 12 | lin5- |
| 13 | lin6+ |
| 14 | lin6- |
| 15 | lin7+ |
| 16 | lin7- |

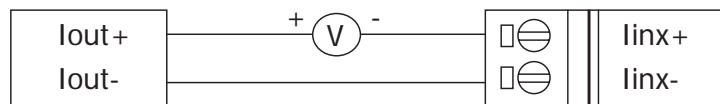
Wire Connection

Wiring for current input

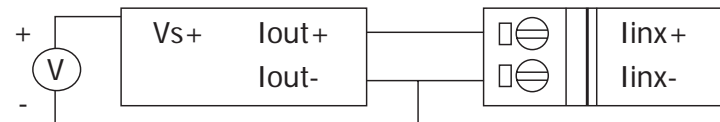


Wiring for transmitter input

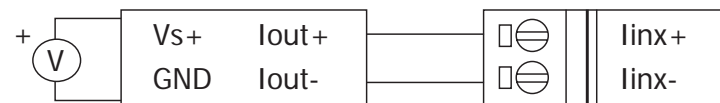
2-Wire



3-Wire



4-Wire



| TYPE | 0D | 07 | 1A |
|--------|-------------------|------------------------|-----------------------|
| SIGNAL | $\pm 20\text{mA}$ | $+4 \sim +20\text{mA}$ | $0 \sim +20\text{mA}$ |

i-87K AI Modules



i-87018R

Analog Input

8-channel Thermocouple Input Module
High Over Voltage Protection



Description

- i-87018R has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

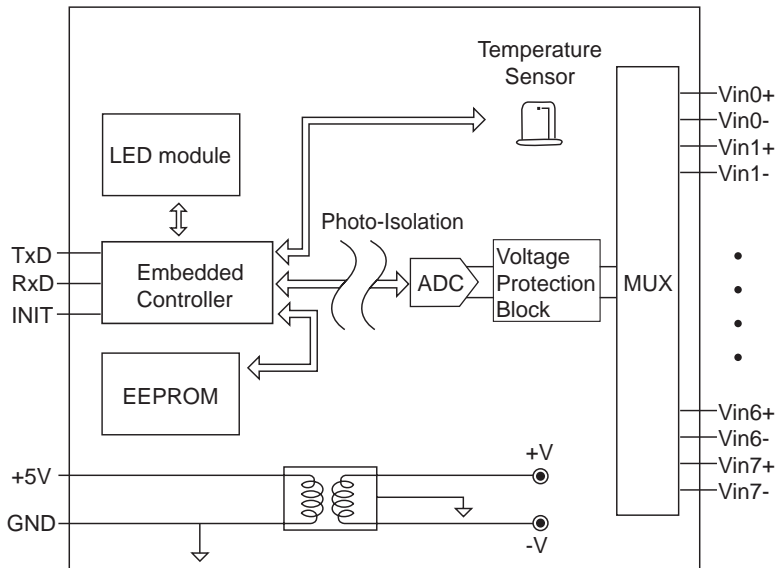
| ■ Analog Input | | | |
|---|--|--------------------------------|--|
| Input channels | 8 Differential | Resolution | 16-bit |
| Input type | +/- 15mV, +/- 50mV, +/- 100mV, +/- 500mV, +/- 1V, +/- 2.5V, -20mA ~ +20mA (Requires Optional External 125 Ohm Resistor) Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710) | | |
| Sampling rate | 10 Samples/ sec (Total) | Over voltage protection | 240 Vrms |
| Zero drift | +/- 10μV/ °C | Common mode rejection | 150 dB |
| Span drift | +/- 25 μV/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 15.7Hz | Input impedance | >1M Ohms |
| Accuracy | +/- 0.25% of FSR | Open wire detection | Yes |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, Field to Logic : 3000 VDC | | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 16 LEDs as High/ Low Alarm Signals | | Power consumption | Maximum : 1.2W |

Note : We recommend to choose **i-87018Z** for accurate thermocouple measurement

Ordering Information

| | |
|---------------|--|
| i-87018R-G CR | 8-channel Thermocouple Input Module (RoHS) |
|---------------|--|

Internal I/O Structure



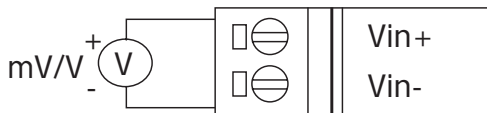
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | Vin0+ |
| 02 | Vin0- |
| 03 | Vin1+ |
| 04 | Vin1- |
| 05 | Vin2+ |
| 06 | Vin2- |
| 07 | Vin3+ |
| 08 | Vin3- |
| 09 | Vin4+ |
| 10 | Vin4- |
| 11 | Vin5+ |
| 12 | Vin5- |
| 13 | Vin6+ |
| 14 | Vin6- |
| 15 | Vin7+ |
| 16 | Vin7- |

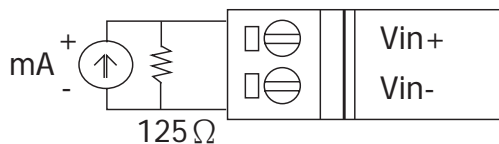
Wire Connection

Thermocouple Type

Voltage Input Wiring

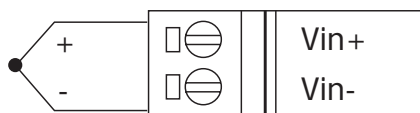


Current Input Wiring



Note: When connecting to a current source, an optional external 125-Ohm resistor is required

Thermocouple Input Wiring



| Type | Range°C |
|--------------|--------------|
| J | -210 ~ +760 |
| K | -270 ~ +1372 |
| T | -270 ~ +400 |
| E | -270 ~ +1000 |
| R | 0 ~ +1768 |
| S | 0 ~ +1768 |
| B | 0 ~ +1820 |
| N | -270 ~ 1300 |
| C | 0 ~ 2320 |
| L | -200 ~ +800 |
| M | -200 ~ +100 |
| L (DIN43710) | -200 ~ +900 |

i-87K AI Modules

Analog Input

10-channel Thermocouple Input Module
High Over Voltage Protection



Description

- i-87018Z has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



i-87018Z connects DB-1820 directly



i-87018Z connect DB-1820 with CD-2518D kit

i-87018Z (with DB-1820/CD-2518D)

Specifications

■ Analog Input

| | | | |
|--|--|---|--|
| Input channels | 10 Differential | Resolution | 16-bit |
| Input type | +/- 15mV, +/- 50mV, +/- 100mV, +/- 500mV, +/- 1V, +/- 2.5V, +/-20mA, 0~20mA, 4~20mA (Requires Optional External 125 Ohm Resistor) Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710) | | |
| Sampling rate | 10 Samples/ sec (Total) | Over voltage protection | 240 Vrms |
| Zero drift | +/- 0.5μV/ °C | Common mode rejection | 150 dB |
| Span drift | +/- 25 ppm/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 15.7Hz | Input impedance | 20M Ohms |
| Accuracy | +/- 0.1% | Open wire detection | Yes |
| Intra-module isolation, Field to Logic : 3000 VDC | | Individual channel configuration | Yes |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |

■ DB-1820

| | | | |
|--------------------------|-------|-------------------|-----------|
| Wire strip length | 4~5mm | Wire range | 16~24 AWG |
|--------------------------|-------|-------------------|-----------|

■ LED Display

1 LED as Power/ Communication Indicator

■ Power

Power consumption 1.3W

Ordering Information

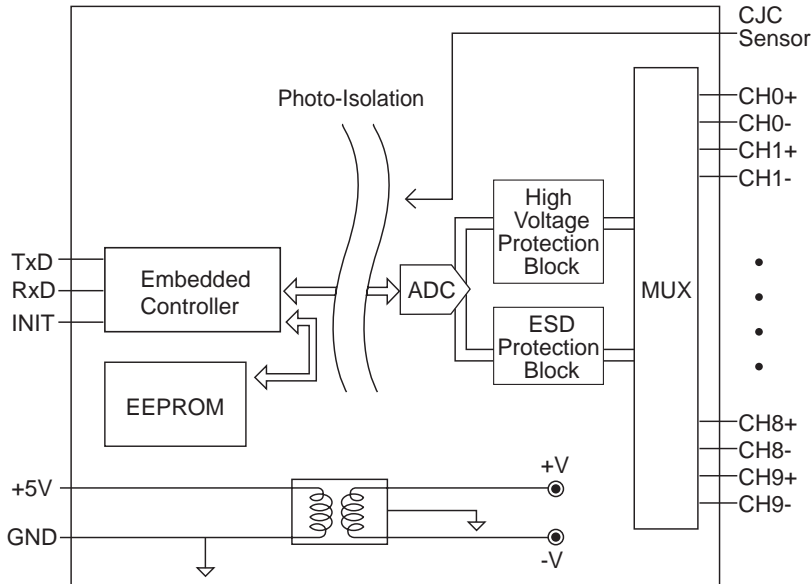
| | |
|-----------------|--|
| i-87018Z-G/S CR | 10-channel Thermocouple Input Module (RoHS) include i-87018Z module and DB-1820 daughter board |
|-----------------|--|

Suggested Accessory

| | |
|----------|---|
| CD-2518D | 25F-25M 1.8m cable with DIN-Rail Mount of DB-1820 |
|----------|---|

Internal I/O Structure

Pin Assignment For i-87018Z



| Name | Terminal No. | Name |
|------|--------------|-------------|
| +5V | 01 | |
| CJC | 02 | 14 AGND |
| CH0- | 03 | 15 CH0+ |
| CH1- | 04 | 16 CH1+ |
| CH2- | 05 | 17 CH2+ |
| CH3- | 06 | 18 CH3+ |
| CH4- | 07 | 19 CH4+ |
| CH5- | 08 | 20 CH5+ |
| CH6- | 09 | 21 CH6+ |
| CH7- | 10 | 22 CH7+ |
| CH8- | 11 | 23 CH8+ |
| CH9- | 12 | 24 CH9+ |
| N.C. | 13 | 25 N.C. |
| | | Shield F.G. |

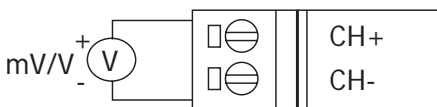
25-Pin Female D-Sub Connector

Wire Connection

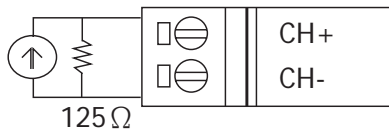
Thermocouple Type

Pin Assignment For DB-1820

Voltage Input Wiring

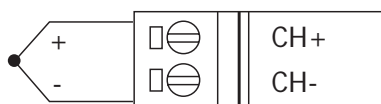


Current Input Wiring



Note: When connecting to a current source, an optional external 125-Ohm resistor is required

Thermocouple Input Wiring



| Type | Range °C |
|--------------|--------------|
| J | -210 ~ +760 |
| K | -270 ~ +1372 |
| T | -270 ~ +400 |
| E | -270 ~ +1000 |
| R | 0 ~ +1768 |
| S | 0 ~ +1768 |
| B | 0 ~ +1820 |
| N | -270 ~ 1300 |
| C | 0 ~ 2320 |
| L | -200 ~ +800 |
| M | -200 ~ +100 |
| L (DIN43710) | -200 ~ +900 |

| NO. | Name | NO. | Name |
|-----|------|-----|------|
| 1 | F.G. | 13 | F.G. |
| 2 | AGND | 14 | AGND |
| 3 | CH0+ | 15 | CH5+ |
| 4 | CH0- | 16 | CH5- |
| 5 | CH1+ | 17 | CH6+ |
| 6 | CH1- | 18 | CH6- |
| 7 | CH2+ | 19 | CH7+ |
| 8 | CH2- | 20 | CH7- |
| 9 | CH3+ | 21 | CH8+ |
| 10 | CH3- | 22 | CH8- |
| 11 | CH4+ | 23 | CH9+ |
| 12 | CH4- | 24 | CH9- |

i-87K AI Modules



i-87019R

Analog Input

8-channel Universal Analog Input Module with **High Over Voltage Protection**



Description

- i-87019R has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



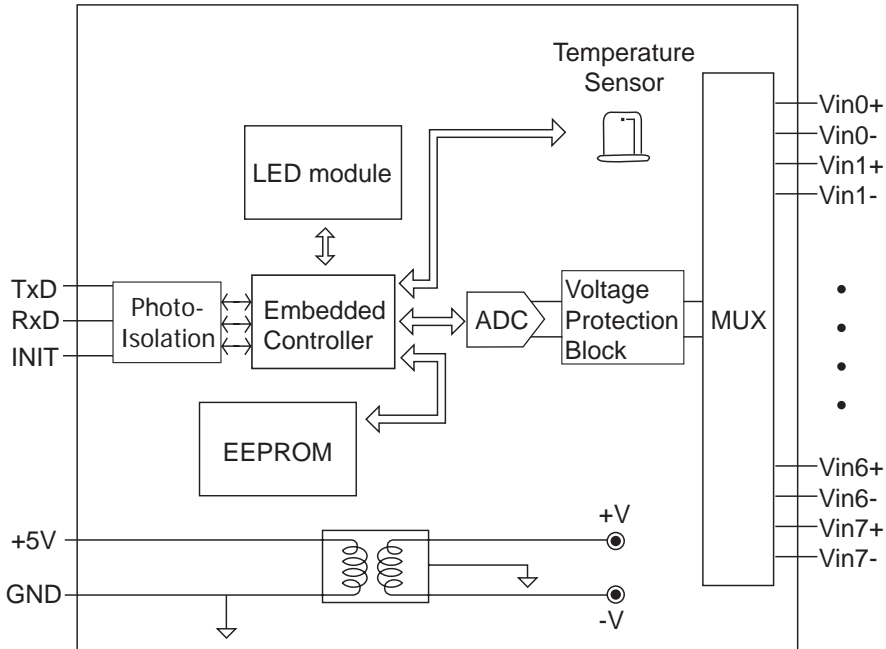
Specifications

| ■ Analog Input | | | |
|---|--|--|--|
| Input channels | 8 Differential | Resolution | 16-bit |
| Input type | +/- 15mV, +/- 50mV, +/- 100mV, +/- 150mV, +/- 500mV, +/- 1V, +/- 2.5V, +/- 5V, +/- 10V -20mA ~ +20mA (Jumper Selectable) Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710) | | |
| Sampling rate | 8 Samples/ sec (Total) | Over voltage protection | 240 Vrms |
| Zero drift | +/- 20μV/ °C | Common mode rejection | 113 dB |
| Span drift | +/- 25 μV/ °C | Normal mode rejection | 100 dB |
| -3dB bandwidth | 15.7Hz | Input impedance | >1M Ohms |
| Accuracy | 0.1% of FSR | Open wire detection | Yes |
| Intra-module isolation, Field to Logic : 3000 VDC | | Individual channel configurable : Yes | |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 16 LEDs as High/ Low Alarm Signals | | Power consumption | Maximum : 1.1W |

Ordering Information

| | |
|---------------|---|
| i-87019R-G CR | 8-channel Universal Analog Input Module with High Voltage Protection (RoHS) |
|---------------|---|

Internal I/O Structure



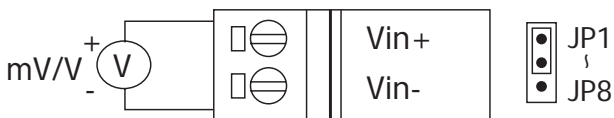
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | Vin0+ |
| 02 | Vin0- |
| 03 | Vin1+ |
| 04 | Vin1- |
| 05 | Vin2+ |
| 06 | Vin2- |
| 07 | Vin3+ |
| 08 | Vin3- |
| 09 | Vin4+ |
| 10 | Vin4- |
| 11 | Vin5+ |
| 12 | Vin5- |
| 13 | Vin6+ |
| 14 | Vin6- |
| 15 | Vin7+ |
| 16 | Vin7- |

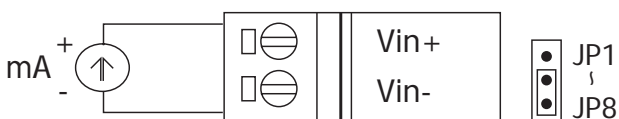
Wire Connection

Thermocouple Type

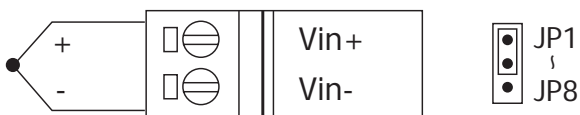
Voltage Input Wiring



Current Input Wiring



Thermocouple Input Wiring



| Code | Type | Range °C |
|------|---------------|--------------|
| 0E | J | -210 ~ +760 |
| 0F | K | -270 ~ +1372 |
| 10 | T | -270 ~ +400 |
| 11 | E | -270 ~ +1000 |
| 12 | R | 0 ~ +1768 |
| 13 | S | 0 ~ +1768 |
| 14 | B | 0 ~ +1820 |
| 15 | N | -270 ~ 1300 |
| 16 | C | 0 ~ 2320 |
| 17 | L | -200 ~ +800 |
| 18 | M | -200 ~ +100 |
| 19 | L2 (DIN43710) | -200 ~ +900 |

i-87K AO Modules

Analog Output

4-channel 14-bit Analog Output Module 



i-87024W

Description

- i-87024 has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

■ Analog Output

| | | | |
|------------------------|---|----------------------------------|--|
| Output channels | 4 | Resolution | 14-bit |
| Output type | 0 ~ +5V, +/- 5V, 0 ~ +10V, +/- 10V, 0 ~ +20mA, +4 ~ +20mA | Programmable output slope | 0.125 to 2048 mA/ second 0.0625 to 1024 V/ second |
| Zero drift | Voltage: +/-30μV/ °C Current: +/-0.2μA/ °C | Voltage output capability | 10V@20mA |
| Span drift | +/- 20ppm/°C | Current load resistance | External +24V : 1050 Ohms |
| Accuracy | +/- 0.1% of FSR | Readback accuracy | +/-1% of FSR |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |

Intra-module isolation, Field to Logic : 3000 VDC

■ LED Display

1 LED as Power/ Communication Indicator

■ Power Consumption

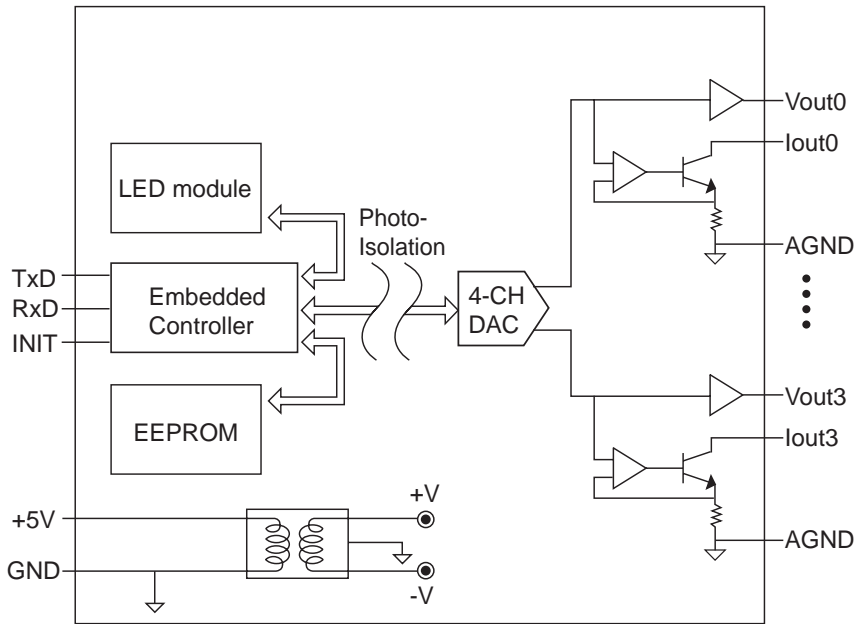
Typical : 1.3W
Maximum : 2.8W (4 Channels output 20mA at 10V)

Ordering Information

| | |
|---------------|--|
| i-87024W-G CR | 4-channel 14-bit analog output module (RoHS) |
|---------------|--|

Internal I/O Structure

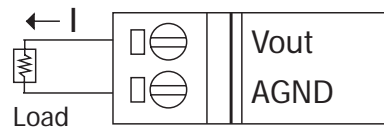
Pin Assignment



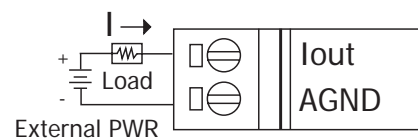
| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | Iout0 |
| 02 | AGND |
| 03 | Iout1 |
| 04 | AGND |
| 05 | Iout2 |
| 06 | AGND |
| 07 | Iout3 |
| 08 | AGND |
| 09 | Vout0 |
| 10 | AGND |
| 11 | Vout1 |
| 12 | AGND |
| 13 | Vout2 |
| 14 | AGND |
| 15 | Vout3 |
| 16 | AGND |

Wire Connection

Voltage Output Wiring



Current Output Wiring



i-87K DI Modules



Digital Input

32-channel **Isolated** Digital Input Module with 16-bit Counters



Description

- i-87040W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



i-87040W

Specifications

| ■ Digital Input | | | |
|---|---|---|---------------------------------------|
| Input channels | 32 (Sink/ source) | Counters | Channels: 32 |
| Input type | Isolation, One Common for All Digital Inputs | | Max. Counters : 16-bit (65535) |
| On voltage level | +3.5V ~ 30V | Input impedance | 4.7K Ohms, 0.25W |
| Off voltage level | +1V max | Intra-module isolation, Field to Logic : 3750 Vrms | |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 32 LEDs as Digital Output Indicators | | Power consumption | 0.7W |

Optional Accessories

| | |
|-------------------|--|
| DN-37-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:5.08mm) |
| DN-37-381-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:3.81mm) |
| CA-3705A/10A/15A | Male-Female D-sub cable 0.5/1/1.5M |
| MD-11 | Input type MagicWire for i-8041/ i-87041 |
| MD-12 | Output type MagicWire for i-8040/ i-87040 |
| FR-Series modules | |



i-8040/ 41/ 42 and i-87040W/ 41W with DN-37-381-A



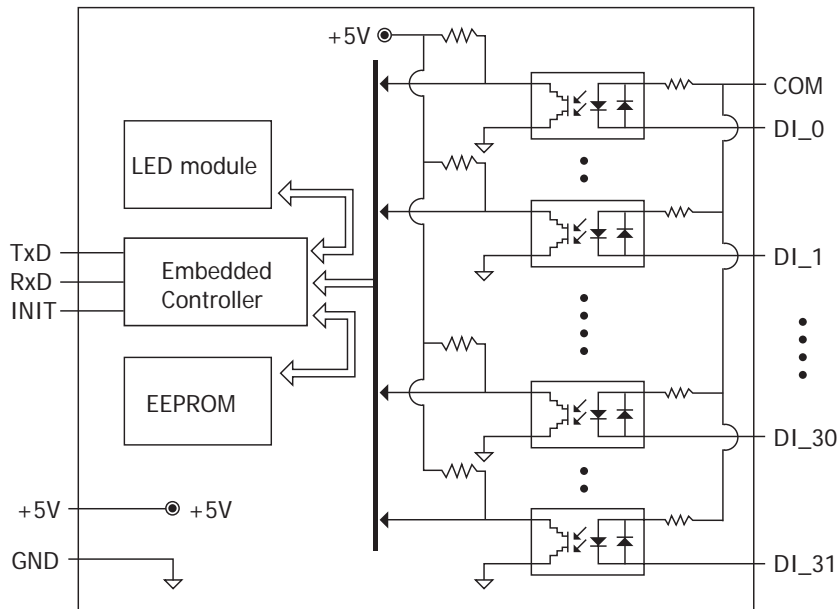
FR-Series modules

Ordering Information

| | |
|---------------|---|
| i-87040W-G CR | 32-channel Isolated Digital Input Module (RoHS) |
|---------------|---|

Internal I/O Structure

Pin Assignment



| Pin Assignment Name | Terminal No. | Pin Assignment Name |
|---------------------|--------------|---------------------|
| COM | 19 | COM |
| NC | 18 | NC |
| NC | 17 | NC |
| DI_15 | 16 | DI_31 |
| DI_14 | 15 | DI_30 |
| DI_13 | 14 | DI_29 |
| DI_12 | 13 | DI_28 |
| DI_11 | 12 | DI_27 |
| DI_10 | 11 | DI_26 |
| DI_9 | 10 | DI_25 |
| DI_8 | 09 | DI_24 |
| DI_7 | 08 | DI_23 |
| DI_6 | 07 | DI_22 |
| DI_5 | 06 | DI_21 |
| DI_4 | 05 | DI_20 |
| DI_3 | 04 | DI_19 |
| DI_2 | 03 | DI_18 |
| DI_1 | 02 | DI_17 |
| DI_0 | 01 | DI_16 |

37-pin Male D-Sub Connector

Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| NPN Output | Open Collector On | Open Collector Off |
| | | |
| PNP Output | Open Collector On | Open Collector Off |
| | | |

i-87K DI Modules



i-87046W

Digital Input

16-channel Non-Isolated Digital Input Module for Long Distance Measurement with 16-bit Counters



Description

- i-87046W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

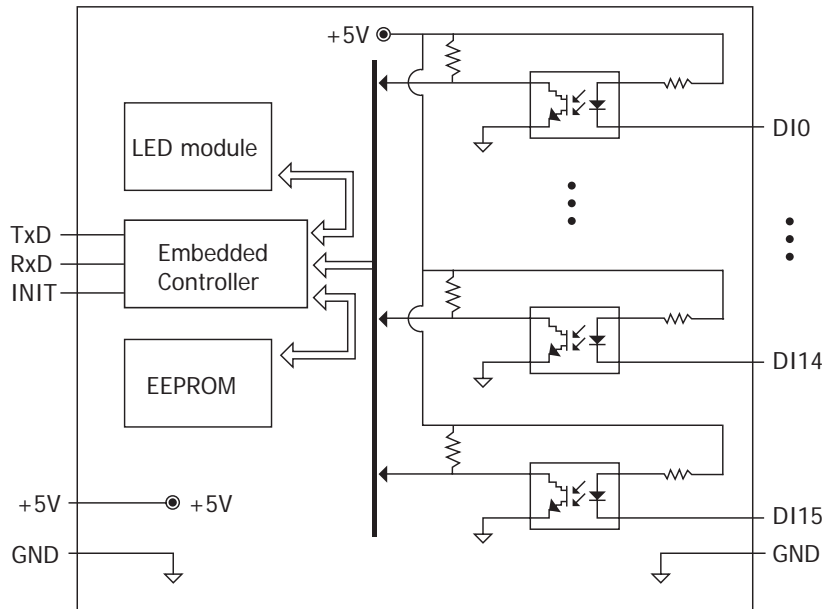
| ■ Digital Input | | | |
|--|--|---|--|
| Input channels | 16 (Sink) | Counters | Channels: 16 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | | |
| EFT protection | 4KV for Power Line and 1KV for RS-485 | Input type | Non-isolated |
| On voltage level | +1V max (Connect to GND.) | Effective distance for Dry Contact: 500m Max. | |
| Off voltage level | +3.5V ~ 30V (Open) | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 16 LEDs as Digital Input Indicators | | Power consumption 1W | |

Ordering Information

| | |
|------------|--|
| i-87046W-G | 16-channel Non-Isolated Digital Input Module for Long Distance Measurement with 16-bit Counters (Gray Cover) |
|------------|--|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0 |
| 02 | DI1 |
| 03 | DI2 |
| 04 | DI3 |
| 05 | DI4 |
| 06 | DI5 |
| 07 | DI6 |
| 08 | DI7 |
| 09 | DI8 |
| 10 | DI9 |
| 11 | DI10 |
| 12 | DI11 |
| 13 | DI12 |
| 14 | DI13 |
| 15 | DI14 |
| 16 | DI15 |
| 17 | GND |
| 18 | GND |
| 19 | GND |
| 20 | GND |

Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

i-87K DI Modules



i-87051W

Digital Input

16-channel Non-isolation Digital Input Module with 16-bit



Description

- i-87051W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| ■ Digital Input | |
|--|--|
| Input channels | 16 (Sink) |
| Input type | Non-isolated |
| On voltage level | +1V max (Connect to GND.) |
| Off voltage level | +3.5V ~ 30V (Open) |
| Counters | Channels: 16 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| ■ LED Display | |
| 1 LED as Power/ Communication Indicator 16 LEDs as Digital Input Indicators | |
| ■ Power | |
| Power consumption | 0.5W |

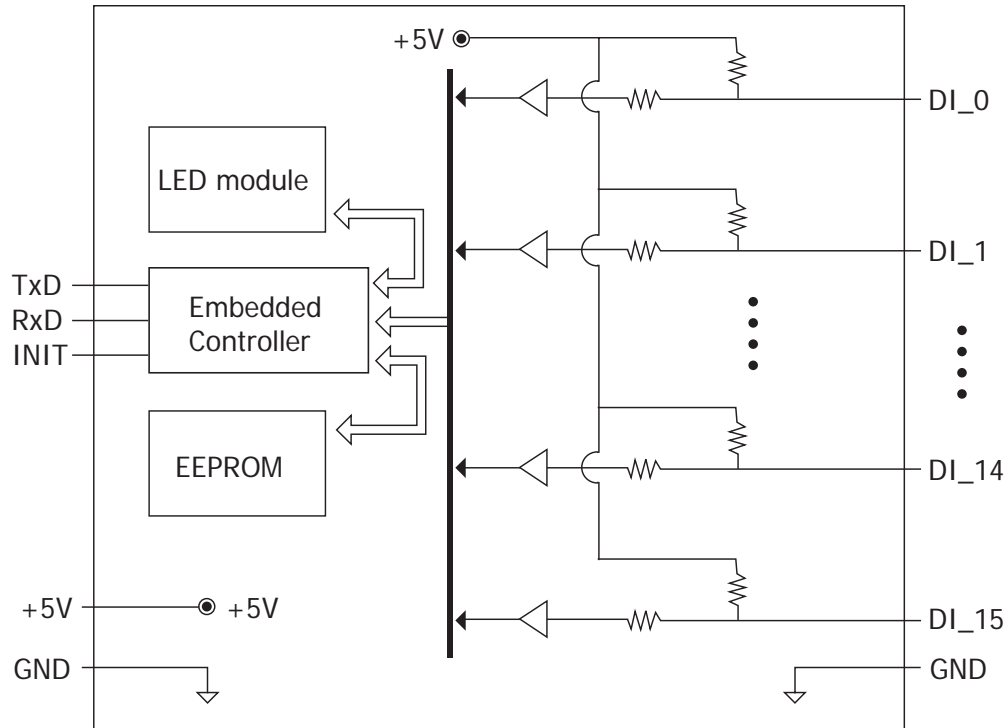
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0 |
| 02 | DI1 |
| 03 | DI2 |
| 04 | DI3 |
| 05 | DI4 |
| 06 | DI5 |
| 07 | DI6 |
| 08 | DI7 |
| 09 | DI8 |
| 10 | DI9 |
| 11 | DI10 |
| 12 | DI11 |
| 13 | DI12 |
| 14 | DI13 |
| 15 | DI14 |
| 16 | DI15 |
| 17 | GND |
| 18 | GND |
| 19 | GND |
| 20 | GND |

Ordering Information

| | |
|---------------|---|
| i-87051W-G CR | 16-channel Non-Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS) |
|---------------|---|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

i-87K DI Modules



i-87052W

Digital Input

8-channel **Isolated** Digital Input Module with 16-bit Counters



Description

- i-87052W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| ■ Digital Input | |
|---|---|
| Input channels | 8 (Sink/Source) |
| Input type | Isolation, Differential |
| On voltage level | +3.5V ~ 30V |
| Off voltage level | +1V max |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input impedance | 3K Ohms, 0.25W |
| 4KV ESD protection | Yes, Contact for each terminal |
| Intra-module isolation, field to logic : 5000Vrms | |
| ■ Dimensions | 31 x 81 x 114 (W x D x H) |
| ■ Power | |
| Power consumption | 0.3W |
| ■ LED Display | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Digital Input Indicators | |

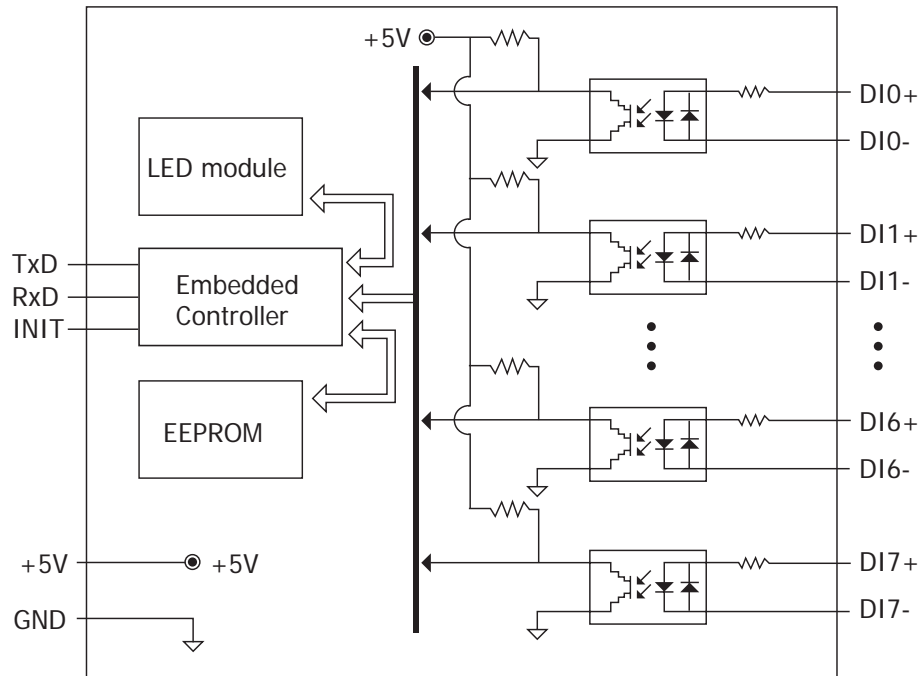
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0+ |
| 02 | DI0- |
| 03 | DI1+ |
| 04 | DI1- |
| 05 | DI2+ |
| 06 | DI2- |
| 07 | DI3+ |
| 08 | DI3- |
| 09 | DI4+ |
| 10 | DI4- |
| 11 | DI5+ |
| 12 | DI5- |
| 13 | DI6+ |
| 14 | DI6- |
| 15 | DI7+ |
| 16 | DI7- |

Ordering Information

| | |
|---------------|--|
| i-87052W-G CR | 8-channel Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

i-87K DI Modules



i-87053W

Digital Input

16-channel **Isolated** Digital Input Module with 16-bit Counters



Description

- i-87053W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| ■ Digital Input | |
|--|--|
| Input channels | 16 (Dry+Wet) |
| Dry contact (sink) | On Voltage Level: Close to GND |
| | Off Voltage Level: Open Effective Distance: 500m Max. |
| Wet contact (sink/ source) | On Voltage Level: +3.5V to +30VDC Off Voltage Level: +1V VDC |
| Input impedance | 3KOhm, 0.33W |
| Counters | Channels: 16 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, field to logic : 3750Vrms | |
| ■ LED Display | |
| 1 LED as Power/ Communication Indicator 16 LEDs as Digital Input Indicators | |
| ■ Power | |
| Power consumption | 0.8W max. |

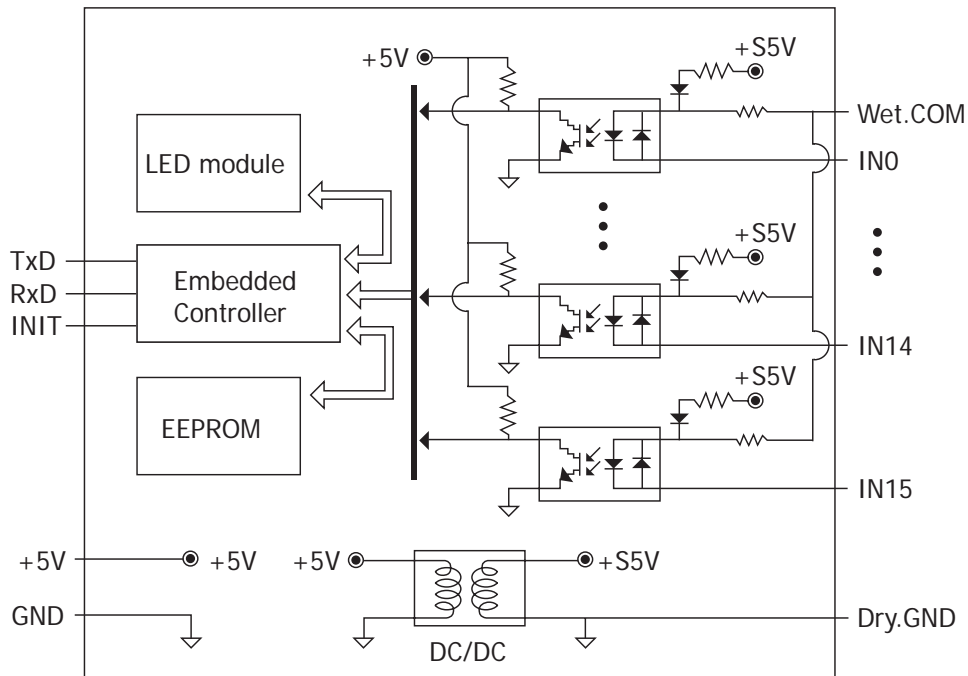
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | IN0 |
| 02 | IN1 |
| 03 | IN2 |
| 04 | IN3 |
| 05 | IN4 |
| 06 | IN5 |
| 07 | IN6 |
| 08 | IN7 |
| 09 | IN8 |
| 10 | IN9 |
| 11 | IN10 |
| 12 | IN11 |
| 13 | IN12 |
| 14 | IN13 |
| 15 | IN14 |
| 16 | IN15 |
| 17 | Wet.COM |
| 18 | Wet.COM |
| 19 | Dry.GND |
| 20 | Dry.GND |

Ordering Information

| | |
|---------------|---|
| i-87053W-G CR | 16-channel Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS) |
|---------------|---|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|-------------------------------|---------------------------------|
| Dry Contact | Relay ON | Relay Off |
| | | |
| Wet Contact (Source) | Voltage > 3.5V | Voltage < 1V |
| | | |
| Wet Contact (Sink) | Voltage > 3.5V | Voltage < 1V |
| | | |

i-87K DI Modules



i-87053W-A5

Digital Input

16-channel 70-150VDC Isolated Digital Input Module with 16-bit Counters

Description

- i-87053W-A5 has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| ■ Digital Input | |
|--|--|
| Input channels | 16 (Dry+Wet) |
| Dry contact (sink) | On Voltage Level: Close to GND Off Voltage Level: Open Effective Distance: 500m Max. |
| Wet contact (sink/ source) | On Voltage Level: +68V to +150VDC Off Voltage Level: +48V Max. |
| Input impedance | 50KOhm, 0.5W |
| Counters | Channels: 16 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, field to logic : 3750Vrms | |
| ■ LED Display | |
| 1 LED as Power/ Communication Indicator 16 LEDs as Digital Input Indicators | |
| ■ Power | |
| Power consumption | 0.9W max |

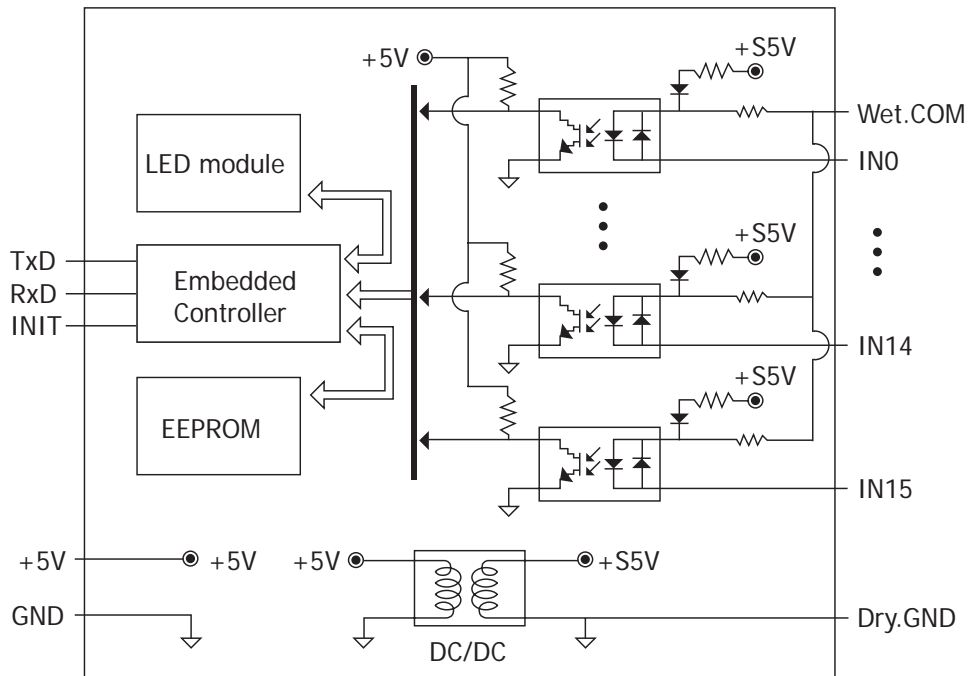
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | IN0 |
| 02 | IN1 |
| 03 | IN2 |
| 04 | IN3 |
| 05 | IN4 |
| 06 | IN5 |
| 07 | IN6 |
| 08 | IN7 |
| 09 | IN8 |
| 10 | IN9 |
| 11 | IN10 |
| 12 | IN11 |
| 13 | IN12 |
| 14 | IN13 |
| 15 | IN14 |
| 16 | IN15 |
| 17 | Wet.COM |
| 18 | Wet.COM |
| 19 | Dry.GND |
| 20 | Dry.GND |

Ordering Information

| | |
|---------------|--|
| i-87053W-A5-G | 16-channel 70-150VDC Isolated Digital Input Module with 16-bit Counters (Gray Cover) |
|---------------|--|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|-------------------------------|---------------------------------|
| Dry Contact | Relay ON | Relay Off |
| | | |
| Wet Contact (Source) | Voltage > 68V | Voltage < 48V |
| | | |
| Wet Contact (Sink) | Voltage > 68V | Voltage < 48V |
| | | |

i-87K DI Modules



i-87058W

AC Digital Input

8-channel 80-250VAC **Isolated** Digital Input Module with 16-bit Counters



Description

- i-87058W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| ■ Digital Input | |
|---|---|
| Input channels | 8 Differential |
| Input type | Isolation, AC Digital Input |
| On voltage level | 80 ~250VAC |
| Off voltage level | 20VAC Maximum |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input impedance | 68K Ohms, 1W |
| AC frequency | 50 ~ 400Hz |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, field to logic : 5000Vrms | |
| ■ LED Display | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Digital Input Indicators | |
| ■ Power | |
| Power consumption | 0.3W |

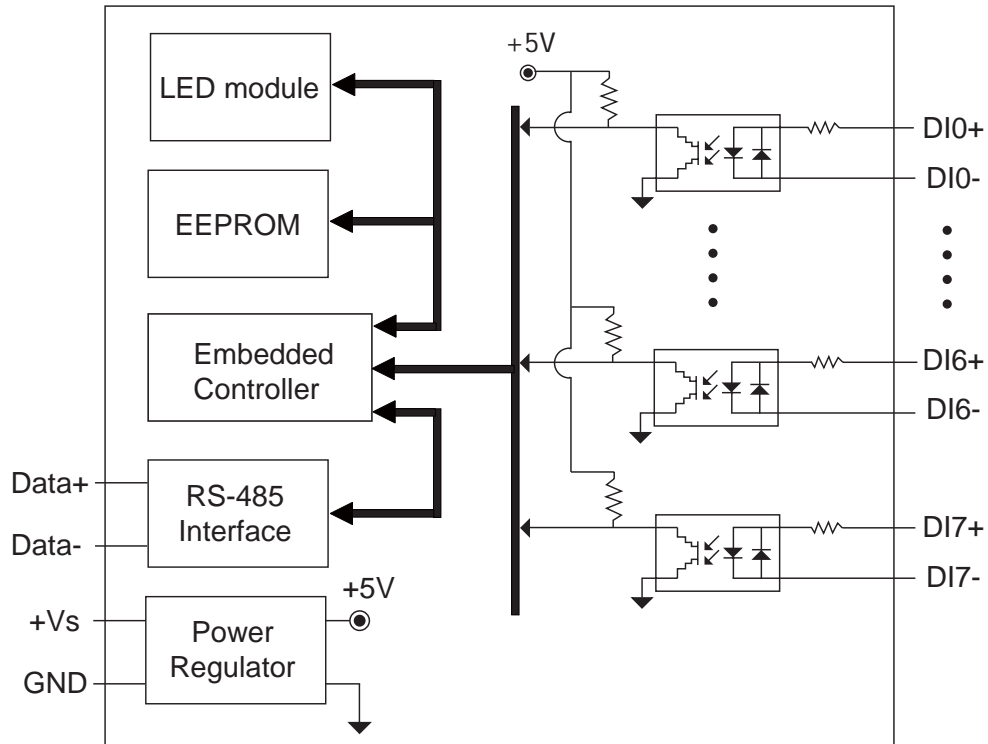
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0A |
| 02 | DI0B |
| 03 | DI1A |
| 04 | DI1B |
| 05 | DI2A |
| 06 | DI2B |
| 07 | DI3A |
| 08 | DI3B |
| 09 | DI4A |
| 10 | DI4B |
| 11 | DI5A |
| 12 | DI5B |
| 13 | DI6A |
| 14 | DI6B |
| 15 | DI7A |
| 16 | DI7B |

Ordering Information

| | |
|---------------|--|
| i-87058W-G CR | 8-channel 80-250VAC Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHs) |
|---------------|--|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage > 80V | Voltage < 20V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

i-87K DI Modules



i-87059W

AC Digital Input

8-channel 10-80VAC Isolated Digital Input Module with 16-bit Counters



Description

- i-87059W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| Digital Input | |
|---|---|
| Input channels | 8 Differential |
| Input type | Isolation, AC Digital Input |
| On voltage level | 10~80 VAC |
| Off voltage level | 3 VAC max |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| Input impedance | 10K Ohms, 1W |
| AC frequency | 47 ~ 400Hz (> 45Hz min) |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, field to logic : 3750Vrms | |
| LED Display | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Digital Input Indicators | |
| Power | |
| Power consumption | 0.3W |

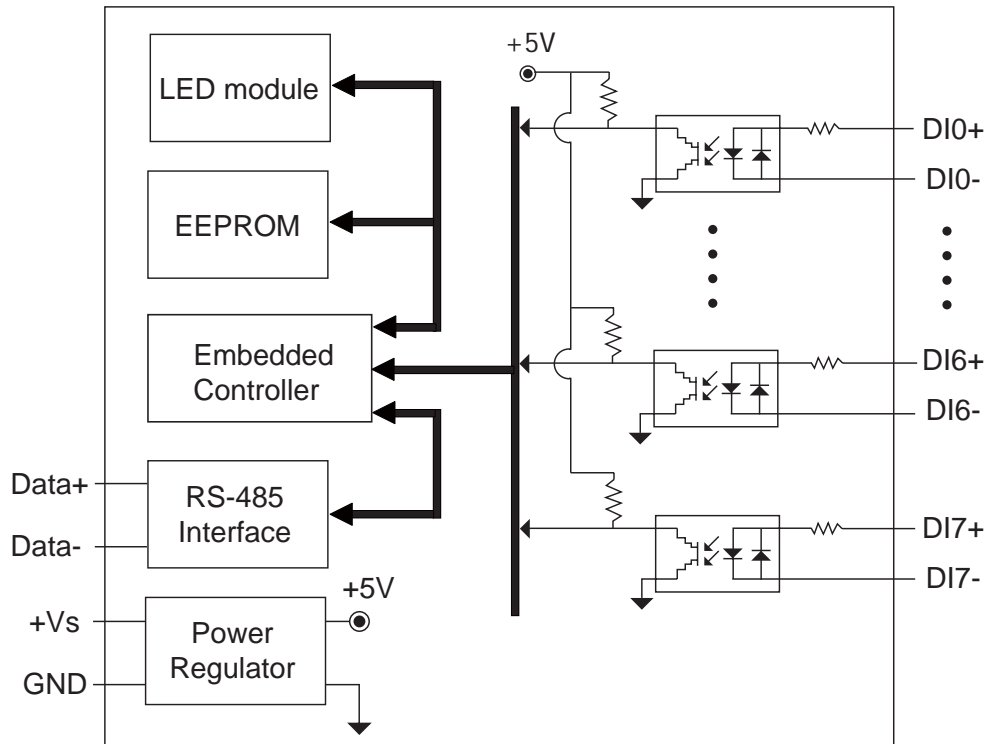
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0A |
| 02 | DI0B |
| 03 | DI1A |
| 04 | DI1B |
| 05 | DI2A |
| 06 | DI2B |
| 07 | DI3A |
| 08 | DI3B |
| 09 | DI4A |
| 10 | DI4B |
| 11 | DI5A |
| 12 | DI5B |
| 13 | DI6A |
| 14 | DI6B |
| 15 | DI7A |
| 16 | DI7B |

Ordering Information

| | |
|---------------|---|
| i-87059W-G CR | 8-channel 10-80VAC Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS) |
|---------------|---|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 10V | Voltage > 3V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

i-87K DI & DO Modules



i-87054W

Digital Input & Output

8-channel Isolated Digital Input and
8-channel Isolated Digital Output Module
with 16-bit Counters

Description

- i-87054W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| ■ Digital Input | |
|---|---|
| Input channels | 8 (Sink/ source) |
| Input type | Isolation, One Common for All Digital Inputs |
| On voltage level | +3.5V ~ 50V |
| Off voltage level | +1V max |
| Input impedance | 10K Ohms, 0.66W |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, field to logic : 3750 Vrms | |
| ■ Digital Output | |
| Output channels | 8 (Sink) |
| Output type | Isolated Open-collector |
| Max load current | 700mA/ channel |
| Load voltage | 5 to 50Vdc |
| Intra-module isolation, field to logic : 3750 Vrms | |
| ■ LED Display | |
| 1 LED as Power/ Communication Indicator 16 LEDs as Digital Input and Output Indicators | |
| ■ Power | |
| Power consumption | 0.8W |

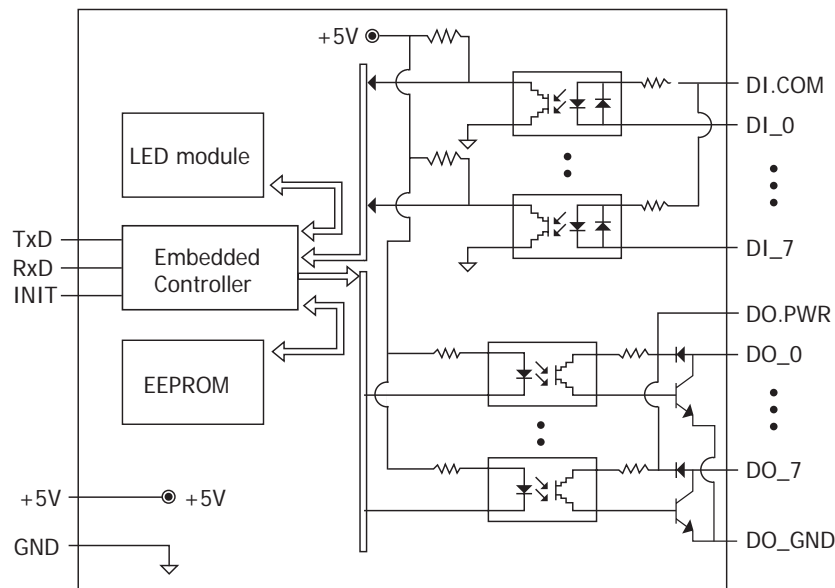
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI.COM |
| 02 | DI0 |
| 03 | DI1 |
| 04 | DI2 |
| 05 | DI3 |
| 06 | DI4 |
| 07 | DI5 |
| 08 | DI6 |
| 09 | DI7 |
| 10 | DO0 |
| 11 | DO1 |
| 12 | DO2 |
| 13 | DO3 |
| 14 | DO4 |
| 15 | DO5 |
| 16 | DO6 |
| 17 | DO7 |
| 18 | DO.GND |
| 19 | DO.GND |
| 20 | DO.PWR |

Ordering Information

| | |
|------------|---|
| i-87054W-G | 8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module with 16-bit Counters (Gray Cover) |
|------------|---|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| NPN Output | Open Collector On | Open Collector Off |
| | | |
| PNP Output | Open Collector On | Open Collector Off |
| | | |

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|-------------------------------|---------------------------------|
| Drive Relay | Relay ON | Relay Off |
| | | |
| Resistance Load | | |
| | | |

i-87K DI & DO Modules



i-87055W

Digital Input & Output

8-channel Non-Isolated Digital Input and 8-channel Non-Isolated Digital Output Module with 16-bit Counters



Description

- i-87055W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

| ■ Digital Input | |
|---|---|
| Input channels | 8 (Sink) |
| Input type | Non-isolated |
| On voltage level | +1V max (Connect to GND.) |
| Off voltage level | +3.5V ~ 30V (Open) |
| Counters | Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| ■ Digital Output | |
| Output channels | 8 (Sink) |
| Output type | Non-isolated Open-collector |
| Max load current | 100 mA/ channel |
| Load voltage | 5 to 30Vdc |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| EFT protection | 4KV for Power Line and 1KV for RS-485 |
| ■ LED Display | |
| 1 LED as Power/ Communication Indicator 16 LEDs as Digital Input and Output Indicators | |
| ■ Power | |
| Power consumption | 0.8W |

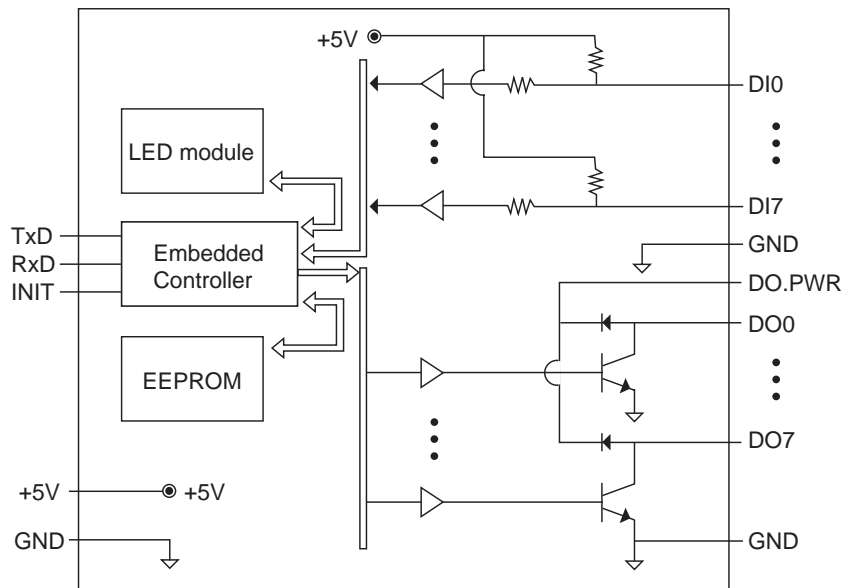
Pin Assignment

| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0 |
| 02 | DI1 |
| 03 | DI2 |
| 04 | DI3 |
| 05 | DI4 |
| 06 | DI5 |
| 07 | DI6 |
| 08 | DI7 |
| 09 | GND |
| 10 | GND |
| 11 | GND |
| 12 | DO0 |
| 13 | DO1 |
| 14 | DO2 |
| 15 | DO3 |
| 16 | DO4 |
| 17 | DO5 |
| 18 | DO6 |
| 19 | DO7 |
| 20 | DO.PWR |

Ordering Information

| | |
|---------------|--|
| i-87055W-G CR | 8-channel Non-Isolated Digital Input and 8-channel Non-Isolated Digital Output Module with 16-bit Counters (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure



Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|-------------------------------|---------------------------------|
| Drive Relay | Relay ON | Relay Off |
| | | |
| Resistance Load | | |
| | | |

i-87K DI & DO Modules



i-87063W

Digital Input & Output

4-channel Isolated Digital Input and 4-channel Relay Output Module with 16-bit Counters



Description

- i-87063W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

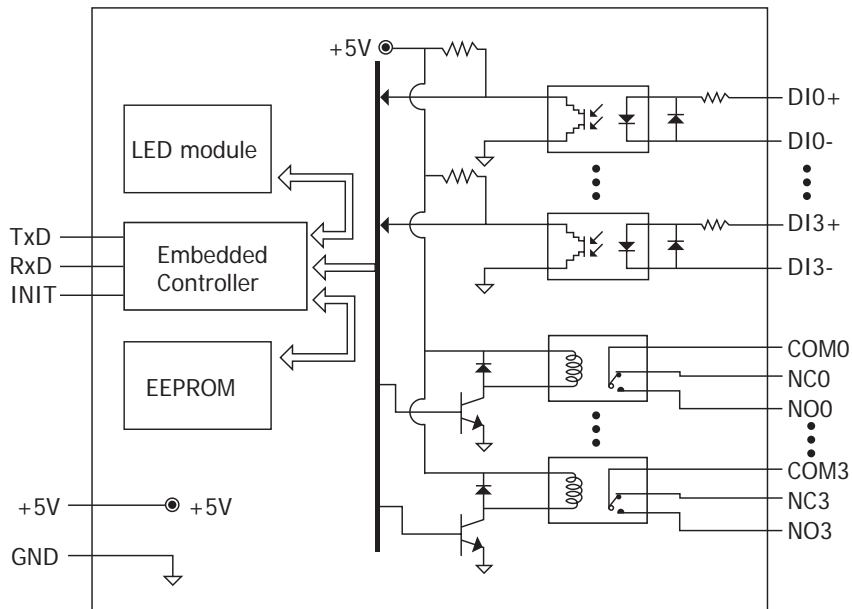
| ■ Digital Input | | | |
|--|--|-----------------------------|---|
| Input channels | 4 (Sink) | Counters | Channels: 4 |
| Input type | Isolation, Differential | | Max. Counters : 16-bit (65535) |
| Input impedance | 3K Ohms, 0.25W | | Max. Input Frequency: 100Hz |
| On voltage level | +3.5V ~ 30V | Off voltage level | +1V max |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, field to logic : 3750 Vrms | | | |
| ■ Digital Output | | | |
| Output channels | 4 | Output type | Power Relay, Form C |
| Operating voltage range | 5 ~ 24VDC@5A (NO)/3A(NC) 0 ~ 250VAC@5A(NO)/3A(NC) | Relay contact voltage range | 5A(NO)/3A(NC)@30VDC 5A(NO)/3A(NC)@277VAC |
| Max. load current | 5A(NO)/3A(NC) | Max. operate time | 10 ms Max. |
| Max. release time | 5 ms Max. | Insulation resistance | Min. 1000 MOhms, at 500VDC |
| Relay life | Mechanical : 5 million ops (no load). Electrical : 100, 000 Min. (rated load) | Dielectric strength | Between Open Contacts : 750VAC, 50/60Hz (at 1 Minute) Between Coil and Contacts : 4000VAC, 50/60Hz (at 1 Minute) |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Digital Input and Relay output Indicators | | Power consumption | 1.5W |

Ordering Information

| | |
|---------------|---|
| i-87063W-G CR | 4-channel Isolated Digital Input and 4-channel Relay Output Module with 16-bit Counters (Gray Cover) (RoHS) |
|---------------|---|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DI0+ |
| 02 | DI0- |
| 03 | DI1+ |
| 04 | DI1- |
| 05 | DI2+ |
| 06 | DI2- |
| 07 | DI3+ |
| 08 | DI3- |
| 09 | NO0 |
| 10 | NC0 |
| 11 | COM0 |
| 12 | NO1 |
| 13 | NC1 |
| 14 | COM1 |
| 15 | NO2 |
| 16 | NC2 |
| 17 | COM2 |
| 18 | NO3 |
| 19 | NC3 |
| 20 | COM3 |

Wire Connection

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------|-------------------------------|---------------------------------|
| Relay Contact | Relay ON | Relay Off |
| | | |
| TTL/CMOS Logic | Voltage < 1V | Voltage > 3.5V |
| | | |
| Open Collector | Open Collector On | Open Collector Off |
| | | |
| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
| Relay Contact | Relay ON | Relay Off |
| | | |

i-87K DO Modules



i-87041W

Digital Output

32-channel Sink Type Open Collector
Isolated Digital Output Module



Description

- i-87041W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

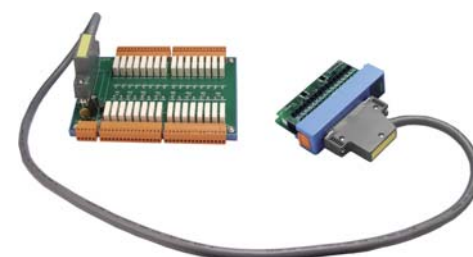
| ■ Digital Output | | | |
|---|--|-------------------|--|
| Output channels | 32 (Sink) | Max load current | 100 mA/ Channel |
| Output type | Isolated Open-collector | Load voltage | 5Vdc to 30Vdc |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, Field to Logic : 3750 Vrms | | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 32 LEDs as Digital Output Indicators | | Power consumption | 1.6W |

Optional Accessories

| | |
|-------------------|---|
| DN- 8K32R | 32-channel relay output board, Include:CA- 3705A (37 Pin Male-Female D-sub cable 0.5M) |
| DN-37-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:5.08mm) |
| DN-37-381-A | I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:3.81mm) |
| CA-3705A/10A/15A | Male-Female D-sub cable 0.5/1/1.5M |
| MD-11 | Input type MagicWire for i-8041/ i-87041 |
| MD-12 | Output type MagicWire for i-8040/ i-87040 |
| FR-Series modules | |



i-8040/ 41/ 42 and i-87040W/ 41W with DN-37-381-A

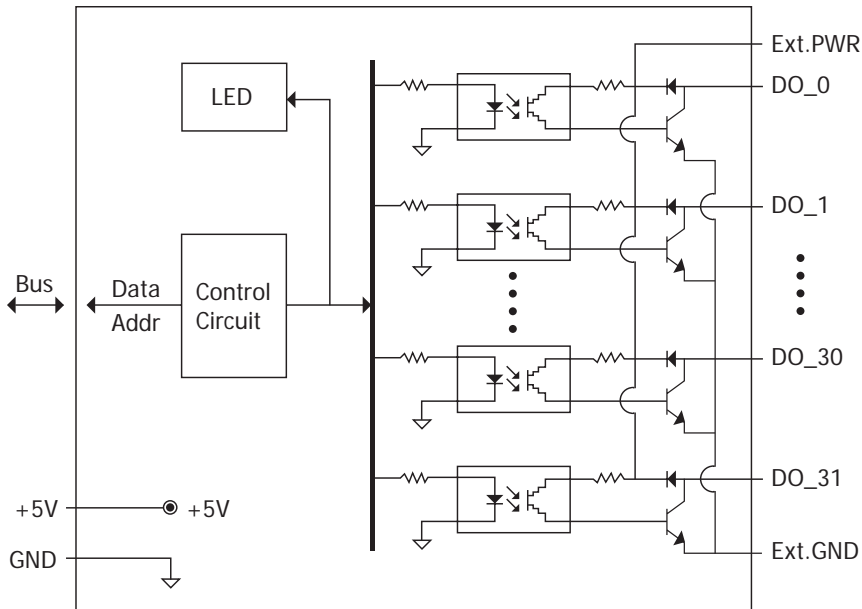


i-8041 and i-87041W with DN-8K32R

Ordering Information

| | |
|---------------|--|
| i-87041W-G CR | 32-channel Sink Type Open Collector Isolated Digital Output Module (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure



Pin Assignment

| Pin Assignment Name | Terminal No. | Pin Assignment Name |
|---------------------|--------------|---------------------|
| Ext.PWR | 19 | Ext.PWR |
| Ext.GND | 18 | Ext.GND |
| Ext.GND | 17 | Ext.GND |
| DO_15 | 16 | DO_31 |
| DO_14 | 15 | DO_30 |
| DO_13 | 14 | DO_29 |
| DO_12 | 13 | DO_28 |
| DO_11 | 12 | DO_27 |
| DO_10 | 11 | DO_26 |
| DO_9 | 10 | DO_25 |
| DO_8 | 09 | DO_24 |
| DO_7 | 08 | DO_23 |
| DO_6 | 07 | DO_22 |
| DO_5 | 06 | DO_21 |
| DO_4 | 05 | DO_20 |
| DO_3 | 04 | DO_19 |
| DO_2 | 03 | DO_18 |
| DO_1 | 02 | DO_17 |
| DO_0 | 01 | DO_16 |

37-pin Male D-Sub Connector

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-----------------|-------------------------------|---------------------------------|
| Drive Relay | Relay ON | Relay Off |
| | | |
| Resistance Load | | |
| | | |

i-87K DO Modules



i-87057W

Digital Output

16-channel Open Collector Isolated Digital Output Module



Description

- i-87057W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

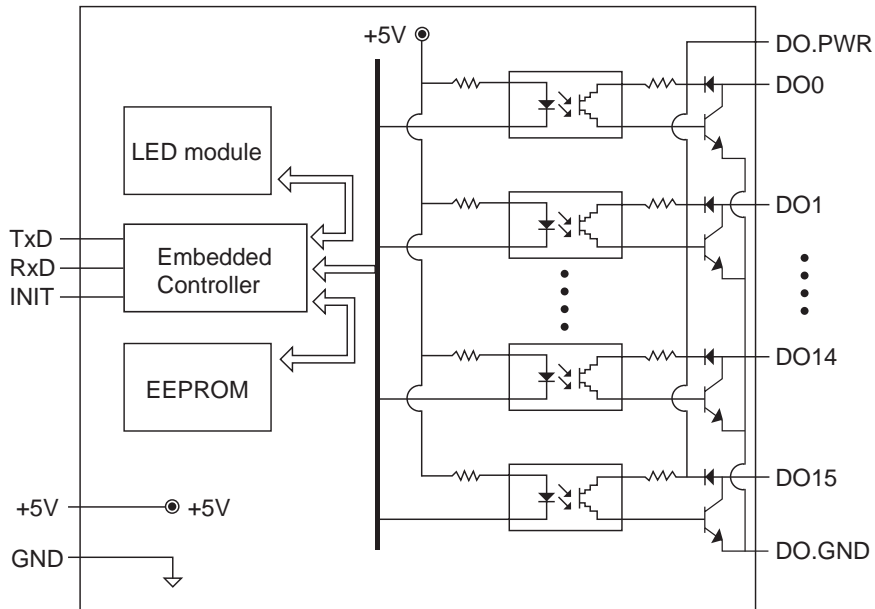
| ■ Digital Output | | | |
|---|---|-------------------|---------------------------------------|
| Output channels | 16 (Sink) | Max load current | 100 mA/ Channel |
| Output type | Isolated Open-collector | Load voltage | 5 to 30Vdc |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module isolation, Field to Logic : 3750 Vrms | | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 16 LEDs as Digital Output Indicators | | Power consumption | 1W |

Ordering Information

| | |
|---------------|--|
| i-87057W-G CR | 16-channel Open Collector Isolated Digital Output Module (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DO0 |
| 02 | DO1 |
| 03 | DO2 |
| 04 | DO3 |
| 05 | DO4 |
| 06 | DO5 |
| 07 | DO6 |
| 08 | DO7 |
| 09 | DO8 |
| 10 | DO9 |
| 11 | DO10 |
| 12 | DO11 |
| 13 | DO12 |
| 14 | DO13 |
| 15 | DO14 |
| 16 | DO15 |
| 17 | DO.GND |
| 18 | DO.GND |
| 19 | DO.PWR |
| 20 | DO.PWR |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|-------------|-------------------------------|---------------------------------|
| Drive Relay | Relay ON | Relay Off |
| | Resistance Load | Resistance Load |

i-87K DO Modules



i-87064W

Digital Output

8-channel Power Relay Output Module



Description

- i-87064W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

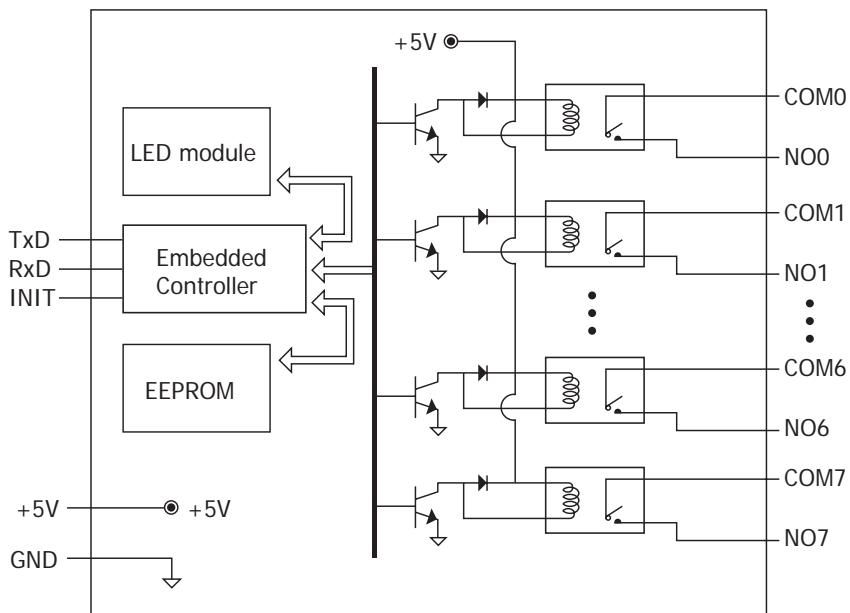
| ■ Digital Output | | | |
|---|---|-----------------------------|---|
| Output channels | 8 | Output type | Power Relay, Form A (Normal Open) |
| Operating voltage range | 5 ~ 240VAC (47~63Hz) 5 ~ 24VDC | Relay contact voltage range | 0~ 250VAC (47~63Hz) 0~ 30VDC |
| Max. load current | 5.0 Arms | Max. operate time | 6 ms Max. |
| Max. release time | 3 ms Max. | Insulation resistance | Min. 1,000 MOhms, at 500VDC |
| Relay life | Mechanical : 2*10,000,000 Min. Electrical : 100,000 min. , Resistive | Dielectric strength | Between Open Contacts : 750Vrms (at 1 Minute) Between Coil and Contacts : 2000Vrms (at 1 Minute) |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Surge strength | 4000V (at 1.2*50us) | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Power Relay Indicators | | Power consumption | 1.5W |

Ordering Information

| | |
|---------------|---|
| i-87064W-G CR | 8-channel Power Relay Output Module (Gray Cover) (RoHS) |
|---------------|---|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | NO0 |
| 02 | COM0 |
| 03 | NO1 |
| 04 | COM1 |
| 05 | - |
| 06 | NO2 |
| 07 | COM2 |
| 08 | NO3 |
| 09 | COM3 |
| 10 | - |
| 11 | NO4 |
| 12 | COM4 |
| 13 | NO5 |
| 14 | COM5 |
| 15 | - |
| 16 | NO6 |
| 17 | COM6 |
| 18 | NO7 |
| 19 | COM7 |
| 20 | - |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---------------|--|--|
| Relay Contact | Relay ON | Relay Off |
| | <p>The diagram shows a Load connected to the NOx terminal of a relay. The COMx terminal is connected to the AC/DC supply. The relay is in the ON state, indicated by a solid line connecting the Load to the NOx terminal.</p> | <p>The diagram shows a Load connected to the NOx terminal of a relay. The COMx terminal is connected to the AC/DC supply. The relay is in the OFF state, indicated by a cross (X) on the line connecting the Load to the NOx terminal.</p> |

i-87K DO Modules

Digital Output

8-channel AC SSR Output Module



i-87065W

Description

- i-87065W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

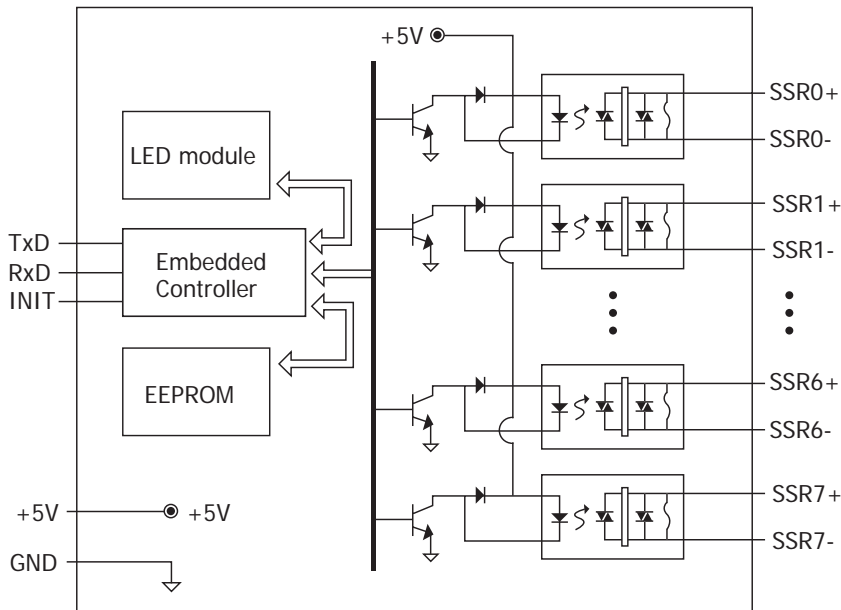
| ■ Digital Output | | | |
|---|--|--------------------------------|--|
| Output channels | 8 | Output type | AC SSR, Form A (Normal Open) |
| Rated load voltage | 24 to 265Vrms | Rated load current | 1.0 Arms |
| Max. operate time | 1 ms | Max. release time | 1/2 Cycle + 1 ms |
| Max. on-state voltage drop | 1.2Vrms | Max. off-state leakage current | 0.75mA (at 100 Vrms 60Hz), 1.5mA (at 200Vrms 60 Hz) |
| Insulation resistance | Min. 1,000 MOhm, at 500VDC | Dielectric strength | 2500 Vrms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Life | Long Life, Maintenance Free | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as AC-SSR Output Indicators | | Power consumption | 0.6W |

Ordering Information

| | |
|---------------|--|
| i-87065W-G CR | 8-channel AC SSR Output Module (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | SSR0+ |
| 02 | SSR0- |
| 03 | SSR1+ |
| 04 | SSR1- |
| 05 | - |
| 06 | SSR2+ |
| 07 | SSR2- |
| 08 | SSR3+ |
| 09 | SSR3- |
| 10 | - |
| 11 | SSR4+ |
| 12 | SSR4- |
| 13 | SSR5+ |
| 14 | SSR5- |
| 15 | - |
| 16 | SSR6+ |
| 17 | SSR6- |
| 18 | SSR7+ |
| 19 | SSR7- |
| 20 | - |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---------------|-------------------------------|---------------------------------|
| AC-SSR Output | Relay ON | Relay Off |
| | | |

i-87K DO Modules

Digital Output

8-channel DC SSR Output Module



i-87066W

Description

- i-87066W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

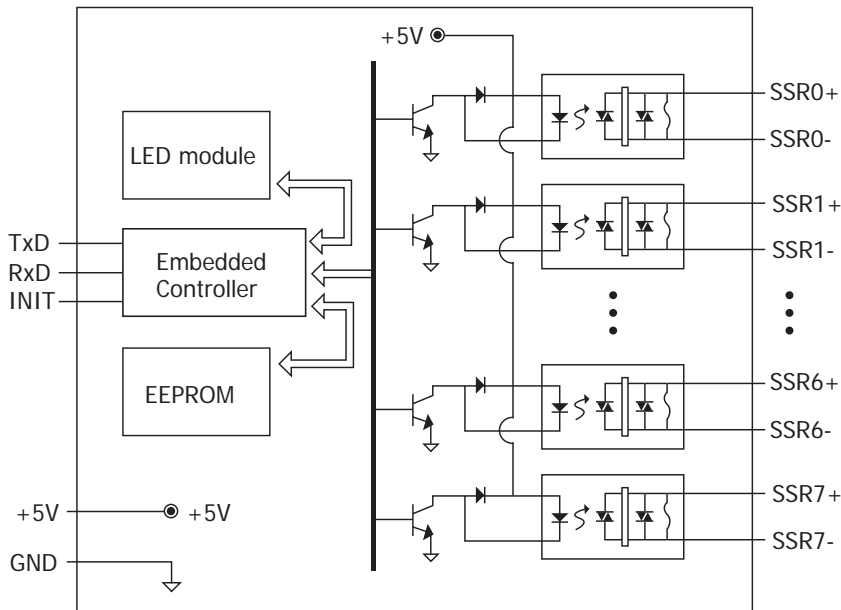
| ■ Digital Output | | | |
|---|---|--------------------------------|---------------------------------------|
| Output channels | 8 | Output type | DC SSR, Form A (Normal Open) |
| Rated load voltage | 3 to 30 VDC | Rated load current | 1.0 Arms |
| Max. operate time | 1 ms | Max. release time | 1 ms |
| Max. on-state voltage drop | 1.2Vrms | Max. off-state leakage current | 0.1mA at 30VDC |
| Insulation resistance | Min. 1,000 MOhm, at 500VDC | Dielectric strength | 2500 Vrms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Life | Long Life, Maintenance Free | | |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as DC-SSR Output Indicators | | Power consumption | 0.6W |

Ordering Information

| | |
|---------------|--|
| i-87066W-G CR | 8-channel DC SSR Output Module (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | SSR0+ |
| 02 | SSR0- |
| 03 | SSR1+ |
| 04 | SSR1- |
| 05 | - |
| 06 | SSR2+ |
| 07 | SSR2- |
| 08 | SSR3+ |
| 09 | SSR3- |
| 10 | - |
| 11 | SSR4+ |
| 12 | SSR4- |
| 13 | SSR5+ |
| 14 | SSR5- |
| 15 | - |
| 16 | SSR6+ |
| 17 | SSR6- |
| 18 | SSR7+ |
| 19 | SSR7- |
| 20 | - |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---------------|-------------------------------|---------------------------------|
| DC-SSR Output | Relay ON | Relay Off |
| | | |

i-87K DO Modules



i-87068W

Digital Output

4-channel Form-A Relay Output and
4-channel Form-C Relay Output Module



Description

- i-87068W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

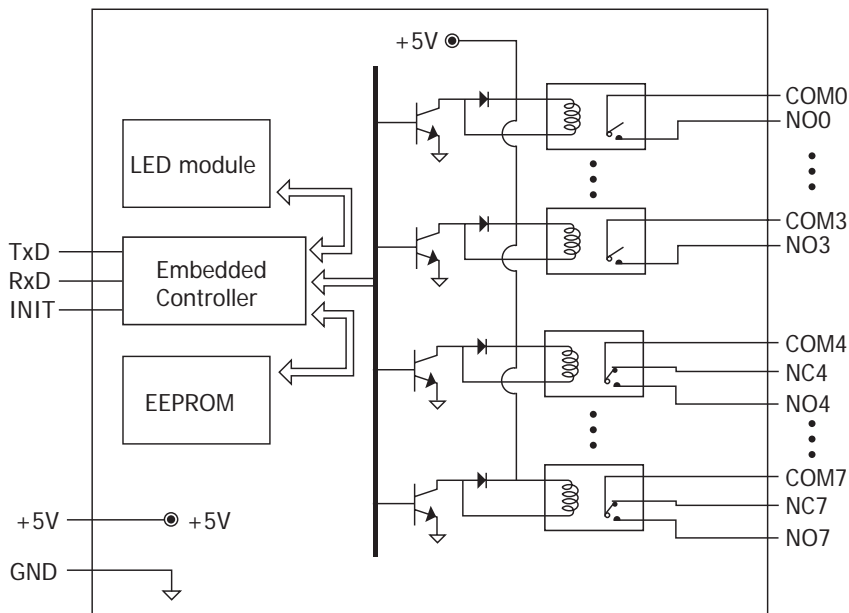
| ■ Digital Output | | | |
|--|---|-----------------------------|--|
| Output channels | 8 | ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge |
| Output type | 4 Form A Power Relays , 4 Form C Power Relays | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Form A | | Form C | |
| Relay contact voltage range | 250VAC @ 8A 28VDC @ 8A | Relay contact voltage range | 5A (NO) /3A (NC) @ 30VDC 5A (NO) /3A (NC) @ 277VAC |
| Max. operate time | 15ms max | Max. operate time | 10ms max |
| Max. release time | 4ms max | Max. release time | 5ms max |
| Relay life | Mechanical life: 10 million operations. (no load) Electrical life: 100,000 operations (rated load) | Relay life | Mechanical life: 5 million operations. (no load) Electrical life: 100,000 operations (rated load) |
| ■ LED Display | | ■ Power | |
| 1 LED as Power/ Communication Indicator 8 LEDs as Power Relay Output Indicators | | Power consumption | 2.5W |

Ordering Information

| | |
|---------------|--|
| i-87068W-G CR | 4-channel Form-A Relay Output and 4-channel Form-C Relay Output Module (Gray Cover) (RoHS) |
|---------------|--|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | NO0 |
| 02 | COM0 |
| 03 | NO1 |
| 04 | COM1 |
| 05 | NO2 |
| 06 | COM2 |
| 07 | NO3 |
| 08 | COM3 |
| 09 | NO4 |
| 10 | NC4 |
| 11 | COM4 |
| 12 | NO5 |
| 13 | NC5 |
| 14 | COM5 |
| 15 | NO6 |
| 16 | NC6 |
| 17 | COM6 |
| 18 | NO7 |
| 19 | NC7 |
| 20 | COM7 |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|---|---|
| Form A Relay Contact | Relay ON | Relay Off |
| | <p>Diagram showing a load connected to a relay contact (NOx) and a common contact (COMx). The load is connected to the NOx contact, and the common contact (COMx) is connected to the load. The load is connected to the NOx contact, and the common contact (COMx) is connected to the load.</p> | <p>Diagram showing a load connected to a relay contact (NOx) and a common contact (COMx). The load is connected to the NOx contact, and the common contact (COMx) is connected to the load. The load is connected to the NOx contact, and the common contact (COMx) is connected to the load.</p> |
| Form C Relay Contact | Relay ON | Relay Off |
| | <p>Diagram showing a load connected to a relay contact (NOx) and a common contact (COMx). The load is connected to the NOx contact, and the common contact (COMx) is connected to the load. The load is connected to the NOx contact, and the common contact (COMx) is connected to the load.</p> | <p>Diagram showing a load connected to a relay contact (NOx) and a common contact (COMx). The load is connected to the NOx contact, and the common contact (COMx) is connected to the load. The load is connected to the NOx contact, and the common contact (COMx) is connected to the load.</p> |

i-87K DO Modules



i-87069W

Digital Output

8-channel PhotoMOS Relay Output Module



Description

- i-87069W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

Digital Output

| | | | |
|--|---|----------------------|---------------------------------------|
| Output channels | 8 | Output type | PhotoMOS Relay, Form A |
| Load voltage | 350V max. at DC/ AC | Load current | 0.13A max. |
| Turn on time | 0.7m s (Typical) | Turn off time | 0.05ms (Typical) |
| Output off state leakage current | 1 uA | Peak load current | 0.4A at 100ms |
| ESD protection | ±4kV Contact Discharge and ±8kV Air Discharge | EFT protection | 4KV for Power Line and 1KV for RS-485 |
| Intra-module Isolation, Field to Logic : 5,000Vrms | | Output on resistance | 23 Ohms |

LED Display

1 LED as Power/ Communication Indicator
8 LEDs as PhotoMos Relay Output Indicators

Power

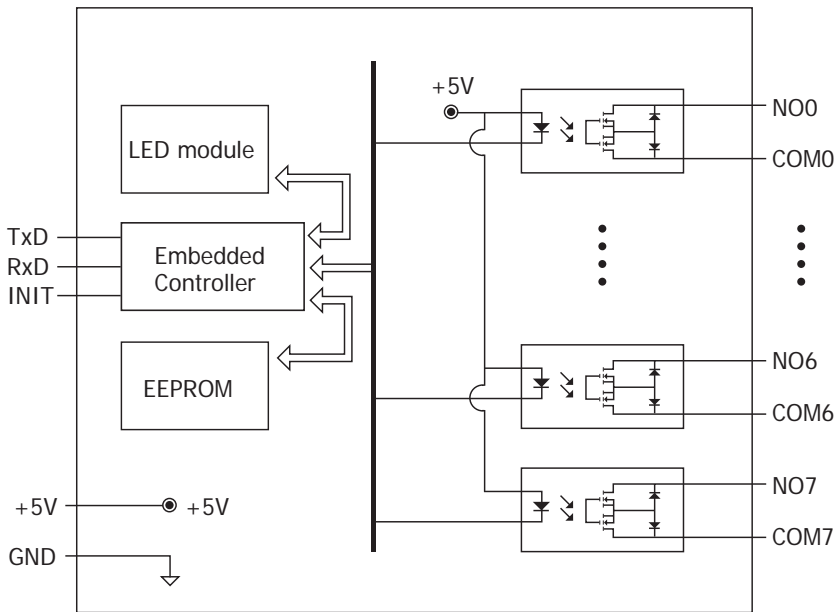
Power consumption 0.5W

Ordering Information

| | |
|---------------|---|
| i-87069W-G CR | 8-channel Photo-MOS Relay Output Module (Gray Cover) (RoHS) |
|---------------|---|

Internal I/O Structure

Pin Assignment



| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | NO0 |
| 02 | COM0 |
| 03 | NO1 |
| 04 | COM1 |
| 05 | NO2 |
| 06 | COM2 |
| 07 | NO3 |
| 08 | COM3 |
| 09 | NO4 |
| 10 | COM4 |
| 11 | NO5 |
| 12 | COM5 |
| 13 | NO6 |
| 14 | COM6 |
| 15 | NO7 |
| 16 | COM7 |

Wire Connection

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|----------------------|-------------------------------|---------------------------------|
| Form A Relay Contact | Relay ON | Relay Off |
| | | |



i-87082W

2-channel Counter/Frequency Module

Description

- i-87082W has a serial bus (RS-485) communication interface with DCON protocol. It can be plugged into our WinCon, LinCon, i-8000 controllers and i-87K, RF-87K I/O expansion units.
- Max. baudrate : 115.2 Kbps



Specifications

Pin Assignment

Counter/Frequency Input

| | |
|---|---|
| Input channels | 2 |
| Input frequency | 1Hz~100K Hz |
| Isolated input | On Voltage Level : +3.5 to 30V Off Voltage Level : +1V max. Intra-module Iso lation, Field to Logic : 3750 |
| Non-isolated input | On Voltage Level : 0 to +5V (Default >2.4V) Off Voltage Level : 0 to +5V (Default <0.8V) Threshold Voltage Level : Programmable |
| Maximum count | 32bit (4,294,967,295) |
| Digital filter | 2uS to 65mS, Programmable |
| Programmable alarm mode | Mode 0 : High Alarm Comparator on Counter 0 and Counter 1 Mode 1 : Two Step High Alarm Comparator on Counter 1 |
| Programmable updated time for frequency inputs : 1.0/0.1sec | |

Digital Output

| | |
|-------------------|-----------------------------|
| Output channels | 2 |
| Output type | Non-isolated Open-collector |
| Max. load current | 30 mA/ channel |
| Load voltage | 5 ~ 30VDC |

Power

| | |
|-------------------|------|
| Power consumption | 0.5W |
|-------------------|------|

LED Display

- 1 LED as Power/ Communication Indicator
- 8 LEDs as Counter/ Frequency status Indicators

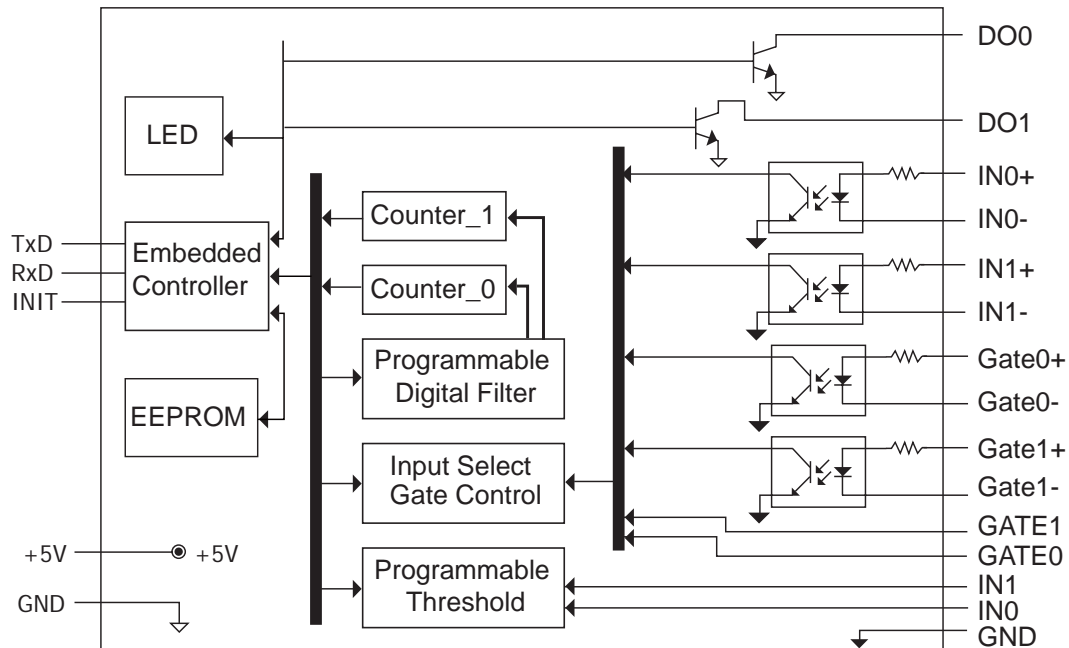
| Terminal No. | Pin Assignment Name |
|--------------|---------------------|
| 01 | DO0 |
| 02 | DO1 |
| 03 | IN0 |
| 04 | GATE0 |
| 05 | GND |
| 06 | IN1 |
| 07 | GATE1 |
| 08 | GND |
| 09 | IN0+ |
| 10 | IN0- |
| 11 | GATE0+ |
| 12 | GATE0- |
| 13 | IN1+ |
| 14 | IN1- |
| 15 | GATE1+ |
| 16 | GATE1- |

Ordering Information

i-87082W-G

2-channel Counter/Frequency Module (Gray Cover)

Internal I/O Structure



Wire Connection

| Input Type | Counter Type | |
|-------------|--|--|
| | Isolation | Non-isolation |
| | Counter Input+ INx+ Counter Input- INx- Gate Control+ GATEx+ Gate Control- GATEx- | Counter Input INx Gate Control GATEx Ground D.GND |
| | Frequency Type | Non-isolation |
| | Frequency Input+ INx+ Frequency Input- INx- Don't be used GATEx+ Don't be used GATEx- | Frequency Input+ INx Don't be used GATEx Frequency Input- D.GND |
| Output Type | Resistance Load | |
| | On state | Off state |
| | | |
| | Inductance Load | Off state |
| | On state | |
| | | |

Other I/O Modules



Blank I/O Module for i-8000

Description

- Blank I/O modules

4SIPP-801-CAB
4SIPP-801-CAG



Ordering information

| | |
|---------------|-------------------------------|
| 4SIPP-801-CAB | Blank I/O Module (Blue Color) |
| 4SIPP-801-CAG | Blank I/O Module (Gray Color) |

Related Products

☑ i-7000, 8K, 87K, M-7000 modules

| | |
|-----------------------------|--|
| Converters | USB, RS-232, Fiber Optical to RS-485 Converters and Repeaters http:// www.icpdas.com > Products > Industrial Communication > Converter & Repeater |
| Power Supply | 24V DC power supply http:// www.icpdas.com > Products > Accessories > Power Supply |
| Relay Module | External relay modules for i-7000/ M-7000 DO module http:// www.icpdas.com > Products > Remote I/O Modules/Units > Relay Modules |
| Learning Kit | Starter learning kit http:// www.icpdas.com > Products > Starter Kit and Application Book > Starter Kit |
| Application Books | Application books designed with our products http:// www.icpdas.com > Products > Application Books > Application Books |
| Data Logger Software | User friendly data logger software (free) http:// www.icpdas.com > Products > Software > EZ Data Logger |
| 125Ohms, 0.1% DIP Resistors | <div> </div> <div> <p>Use for current type of i-7017/18, M-7017/18 series</p> </div> |



ICP DAS CO., LTD

<http://www.icpdas.com>
e-mail: service@icpdas.com

Taiwan

Hsinchu

No. 111, Guangfu N. Rd., Hukou Township,
Hsinchu County, Taiwan 30351, R.O.C.
TEL : 886-3-597-3366 FAX : 886-3-597-3733

Banchiao

8 Fl.-2, No. 33, Sec. 1, Minsheng Rd., Banchiao City,
Taipei County, Taiwan 22069, R.O.C.
TEL : 886-2-2950-0655 FAX : 886-2-2950-0807

Hsintien

7 Fl.-2, No. 137, Lane 235, Baociao Rd., Sindian City,
Taipei County, Taiwan 23145, R.O.C.
TEL : 886-2-8919-2220 FAX : 886-2-8919-2221

Taichung

9 Fl.-6, No. 123, Sec. 3, Taichung Port Rd.,
Central District, Taichung City, Taiwan 40767, R.O.C.
TEL : 886-4-2358-2815 FAX : 886-4-2358-9114

Kaohsiung

3 Fl., No. 505, Jhongshan 2nd Rd., Sinsing District,
Kaohsiung City, Taiwan 80146, R.O.C.
TEL : 886-7-215-7688 FAX : 886-7-216-2602

China

Website : <http://www.icpdas.com.cn>
E-mail : sales_sh@icpdas.com.cn

Shanghai

Suite B, Floor 6, Xin'an Building,
200 Zhenning Rd., Shanghai
TEL : 86-21-6247-1722 FAX : 86-21-6247-1725

Beijing

Suite 6512, Floor 5, Kangde Building,
17 Shangdiliu St., Haidian District, Beijing
TEL : 86-10-6298-0933 FAX : 86-10-6296-2890

Europe

Website : <http://www.icpdas-europe.com>
e-mail : info@icpdas-europe.com
TEL : 0049-711-9973775
FAX : 0049-711-9973784

USA

website : <http://www.icpdas-usa.com>
e-mail : sales@icpdas-usa.com
TEL : 1-310-517-9888 x101
FAX : 1-310-517-0998