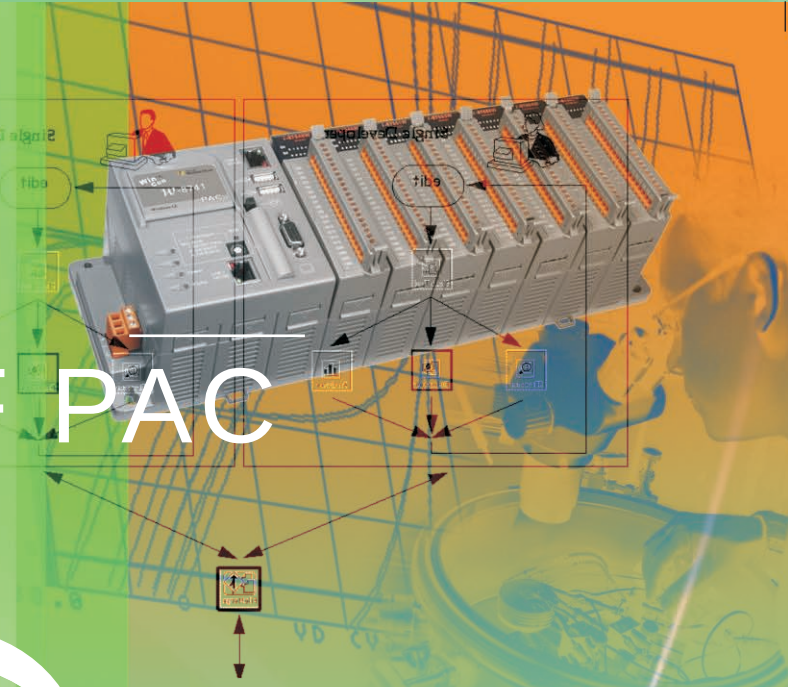
I/O Modules
for ISaGRAF PAC



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

ICP DAS

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

Applications

ICP DAS provides total solutions in industrial contorl, 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 Supprot

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.

■ New ■ Available soon ■ Will be Available

Module		i-7000 Support Dcon Protocol	M-7000 Support Dcon & Modbus Protocol
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			

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 s toolkits kits 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 → NAPOPC 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, Dephi, 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

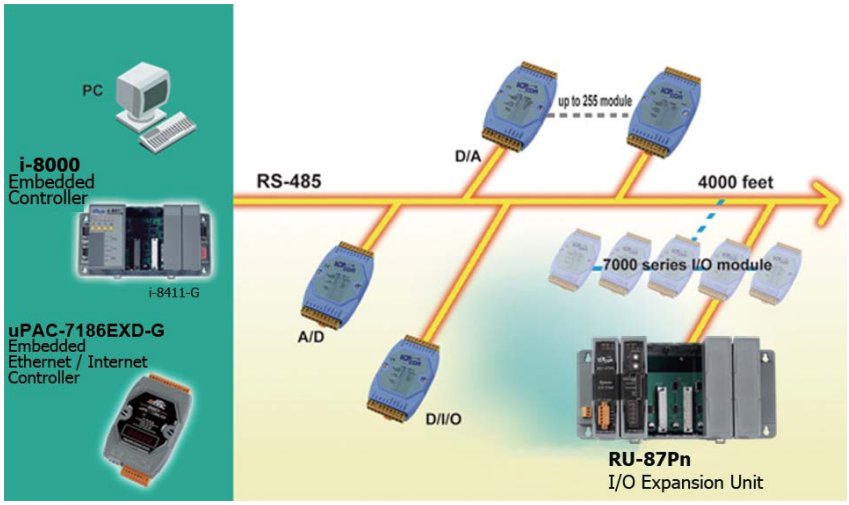
i-7000/M-7000 modules provide signal conditioning system monitoring, alarm signal output, and safe value setting.

>> 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*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 * Need external 125Ω resistors ** Jumper selectable	+/-150mV +/-500mV +/-1V +/-5V +/-10V +/-20mA (*)	+/-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 * 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 +/-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 & Digital 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

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

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


One-channel Analog Input Module

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.

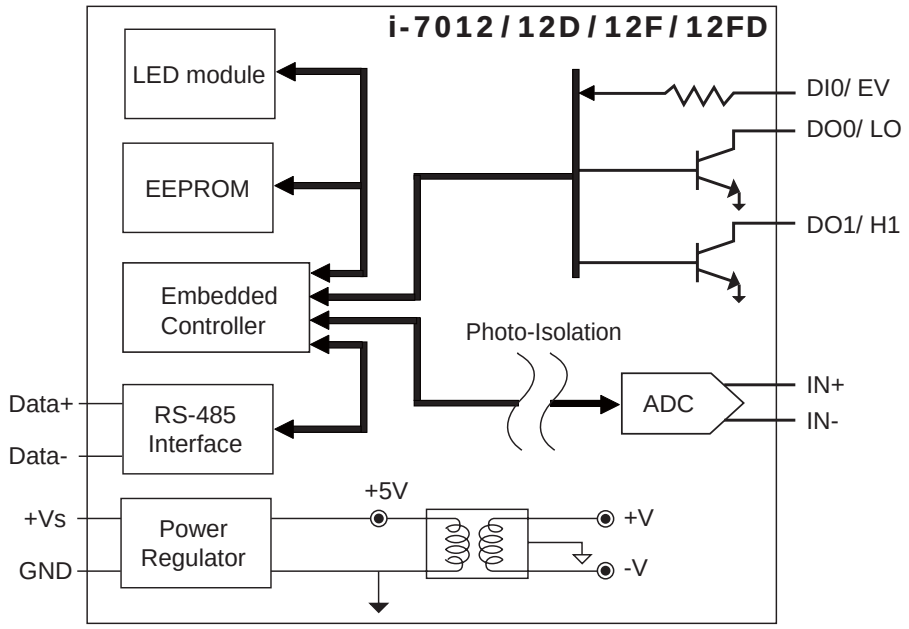
Specifications

■ 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)

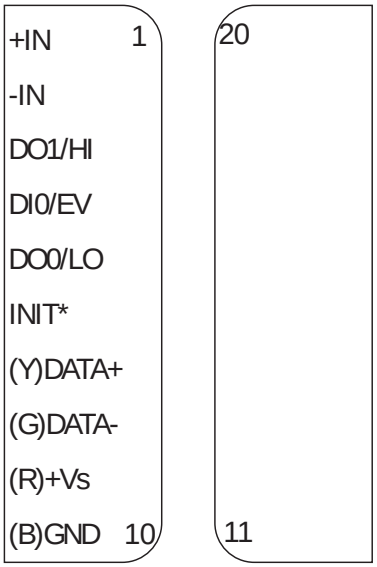
Ordering Information

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

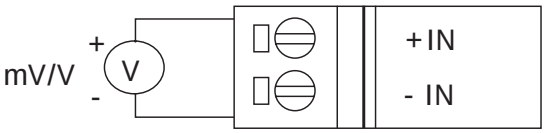


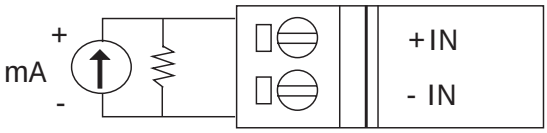
Pin Assignment



Wire Connection

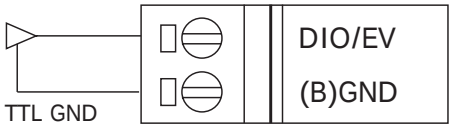
Analog Input

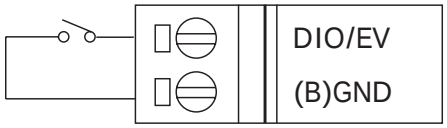


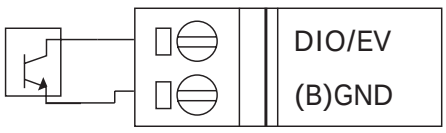


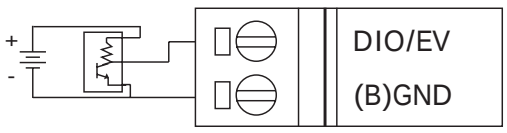
Note: When connecting to a current source, an optional external 125Ω resistor is required.

Digital Input

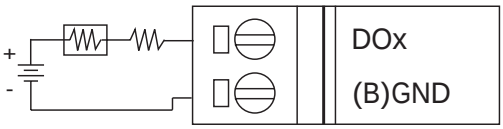


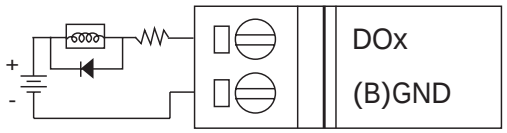






Digital Output





Voltage & Current

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

RoHS

Description

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

i-7017R

CE FC

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

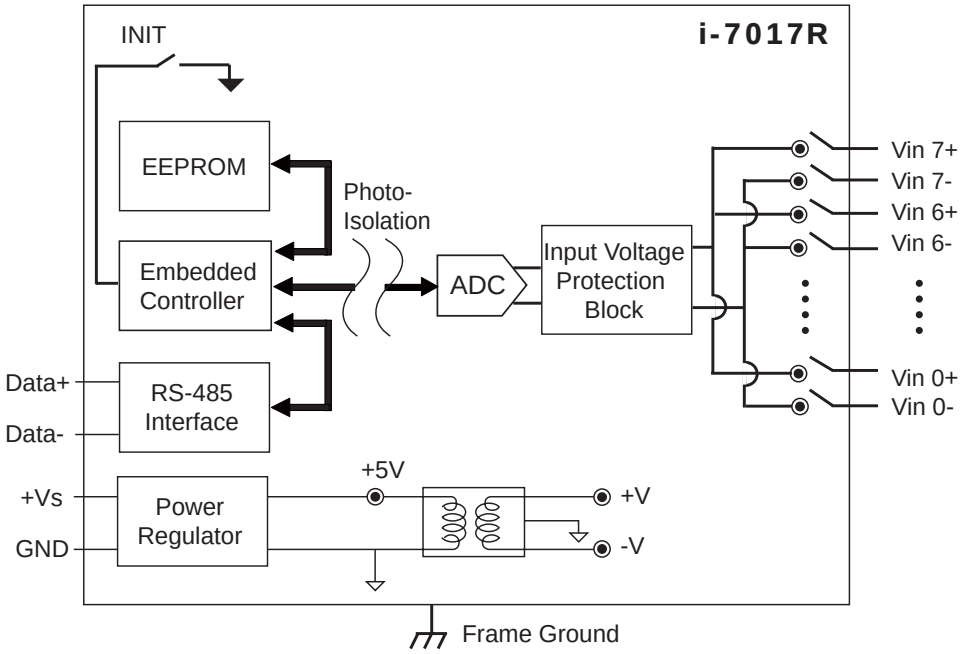
■ LED Display	■ Power	
1 LED as Power/ Communication Indicator	**Input**	+10 to +30 Vdc
	Power consumption	1.3W

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

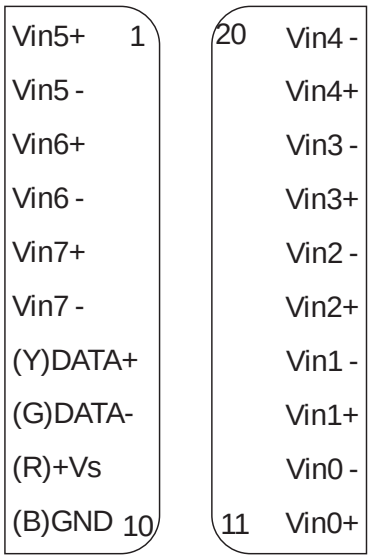
Ordering Information

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

Internal I/O Structure

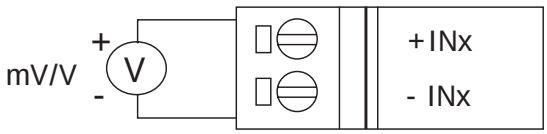


Pin Assignment

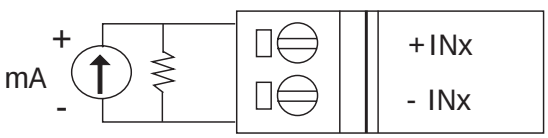


Wire Connection

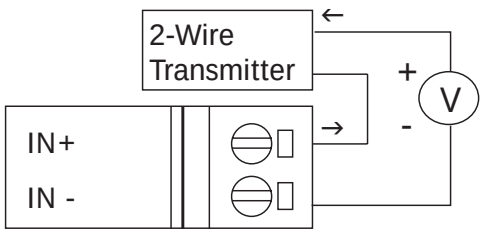
Voltage Input



Current Input



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



Voltage

8-channel **High Voltage** Input Module

RoHS

Description

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

i-7017R-A5

CE FC

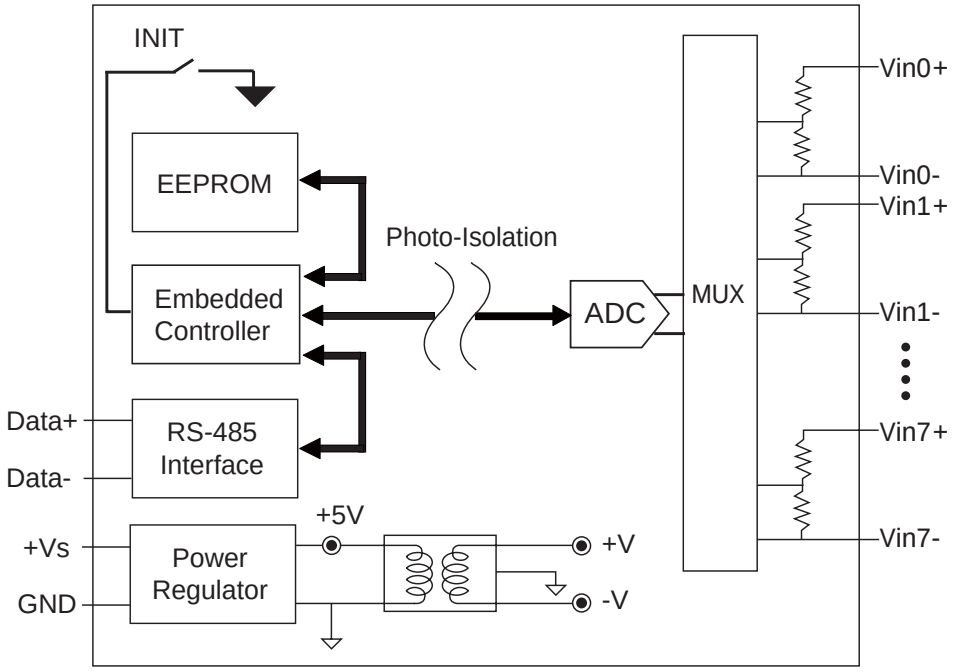
Specifications

■ 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

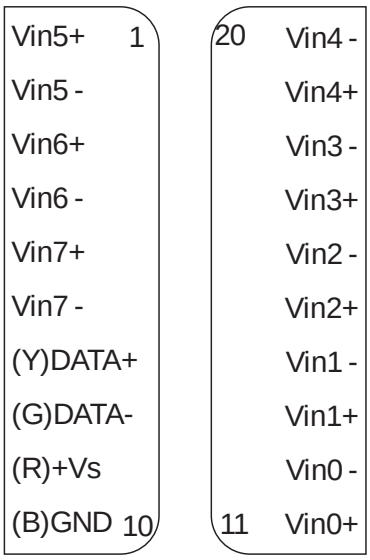
Ordering Information

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

Internal I/O Structure

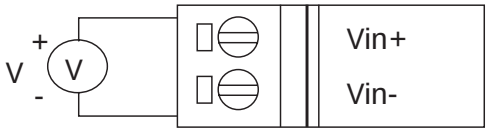


Pin Assignment



Wire Connection

High Voltage Input Wiring



TYPE	SIGNAL
1B	±150V
1C	±50V

Voltage & Current

i-7017RC

8-channel Current Input Module with **High Common Voltage Protection**

RoHS

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.

CE FC

Specifications

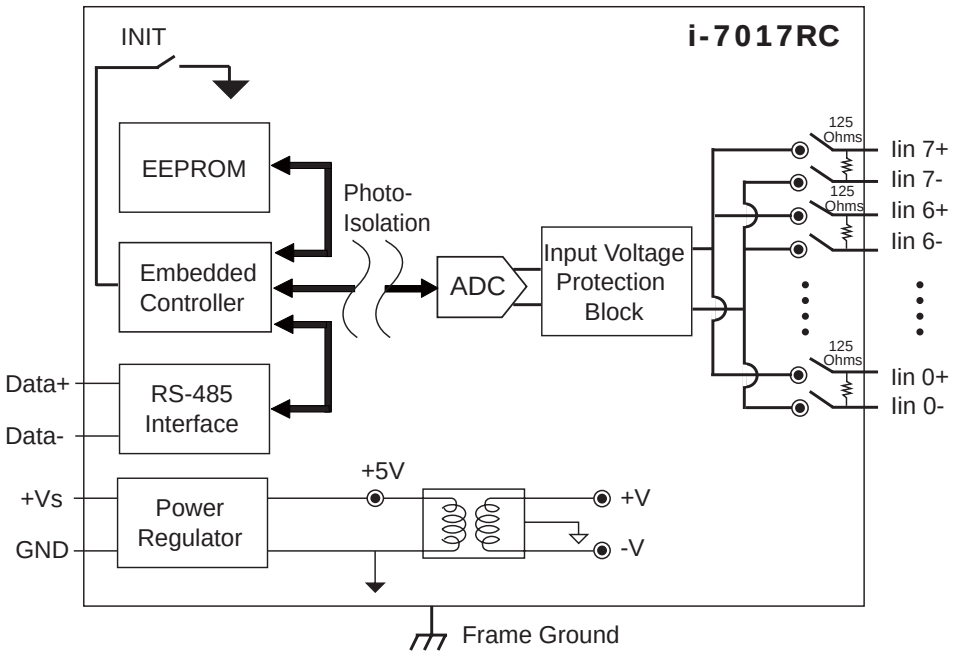
■ Analog Input			
Input channels	8 Differential	**Input type**	+/-20mA, 0~20mA, 4~20mA
Sampling rate	Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total)	**Resolution**	Normal Mode : 16-bit, Fast Mode : 12-bit
Accuracy	Normal Mode :+/- 0.1% of FSR Fast Mode :+/- 0.5% of FSR or better	**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		■ Power	
■ LED Display		**Input**	+10 to +30 VDC
1 LED as Power/ Communication Indicator		**Power consumption**	Maximum : 1.3W

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

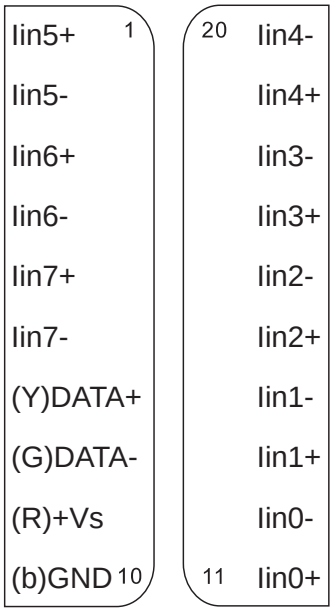
Ordering Information

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

Internal I/O Structure

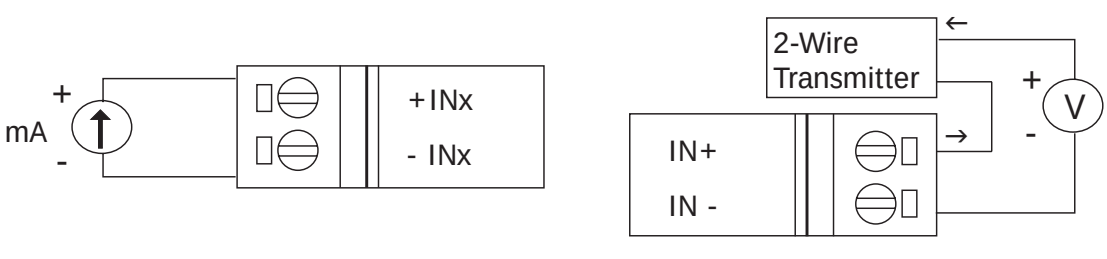


Pin Assignment



Wire Connection

Current Input



Voltage & Current

10-channel Analog Input Module with
High Common Voltage Protection

RoHS

i-7017Z

Description

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

CE FC

Specifications

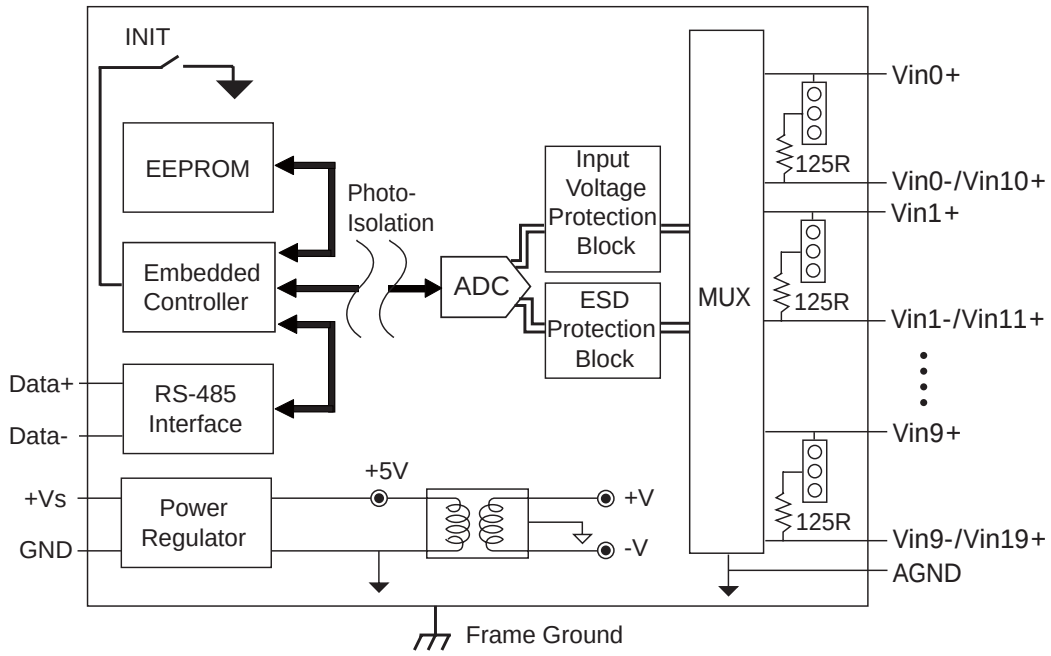
■ Analog Input			
Input channels	10 differential or 20 single-ended, software selectable	**Resolution**	Normal Mode : 16-bit, Fast Mode : 12-bit
Input type	+/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA ,0~20mA, 4~20mA (jumper selectable)		
Sampling rate	Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 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

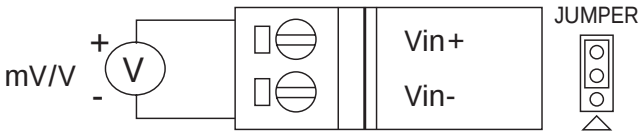


Pin Assignment

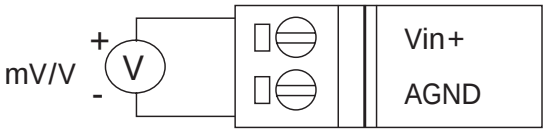
Vin6+	1	20	AGND
Vin6-/Vin16+			Vin5-/Vin15+
Vin7+			Vin5+
Vin7-/Vin17+			Vin4-/Vin14+
Vin8+			Vin4+
Vin8-/Vin18+			Vin3-/Vin13+
Vin9+			Vin3+
Vin9-/Vin19+			Vin2-/Vin12+
AGND			Vin2+
(Y)DATA+			Vin1-/Vin11+
(G)DATA-			Vin1+
(R)+Vs			Vin0-/Vin10+
(b)GND	10	11	Vin0+

Wire Connection

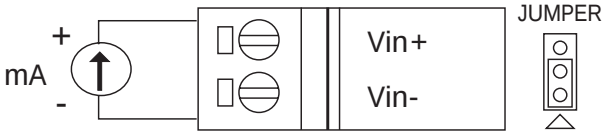
Voltage Input (Differential Mode)



Voltage Input (Single-ended Mode)



Current Input



Thermocouple

One-channel Thermocouple Input Module

i-7011/P
i-7011D/PD

Description

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

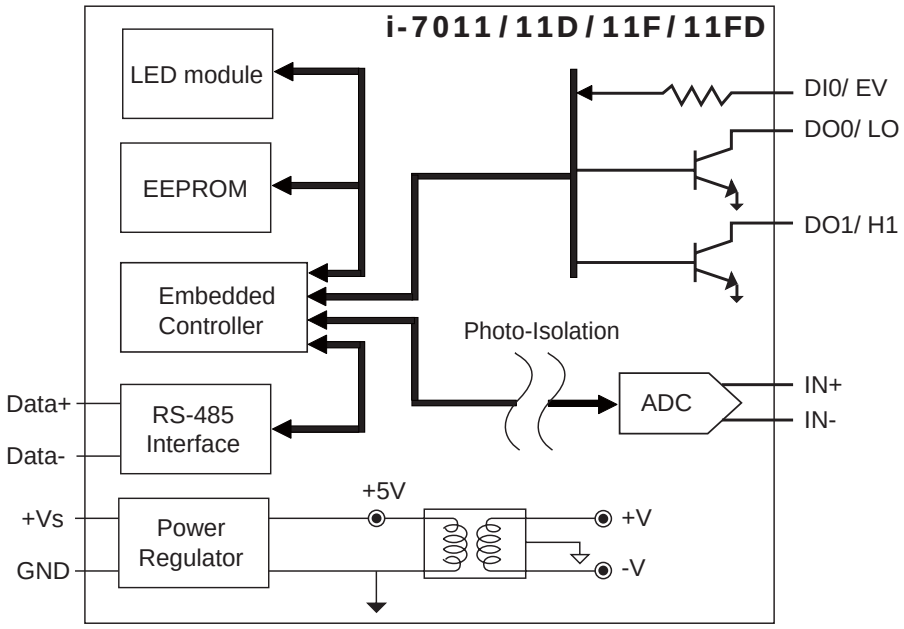
Specifications

■ 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)

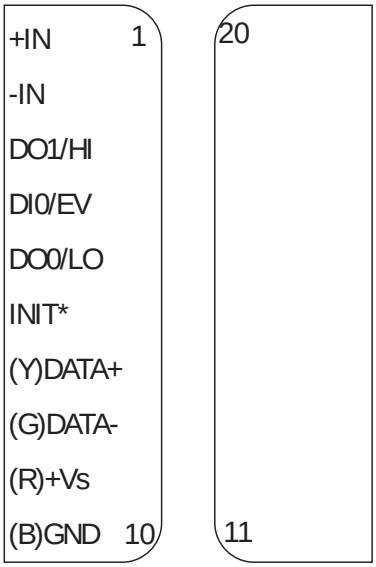
Ordering Information

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

Internal I/O Structure

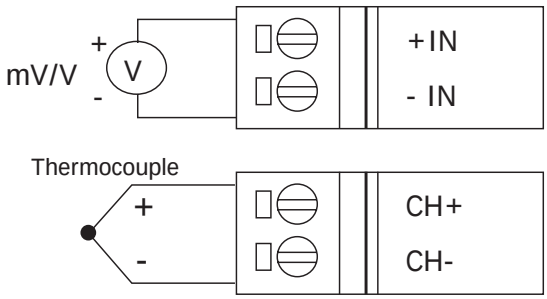


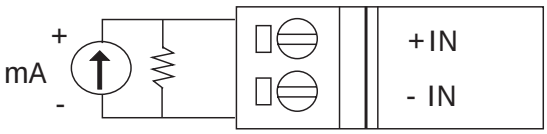
Pin Assignment



Wire Connection

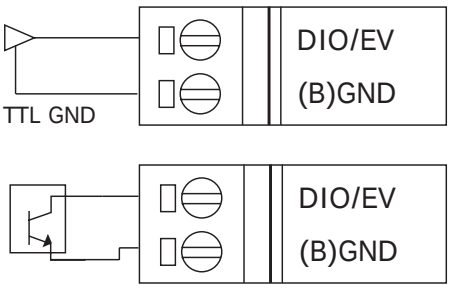
Analog Input

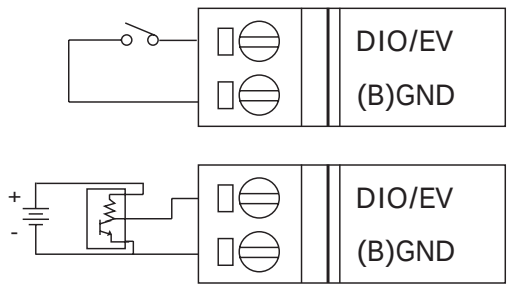




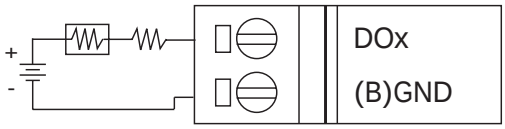
Note: When connecting to a current source, an optional external 125Ω resistor is required.

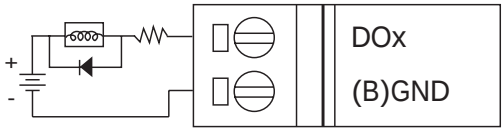
Digital Input





Digital Output





Thermocouple

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

RoHS

i-7018R

Description

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

CE FC

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**	+10 to +30 Vdc
	Power consumption	1.0W

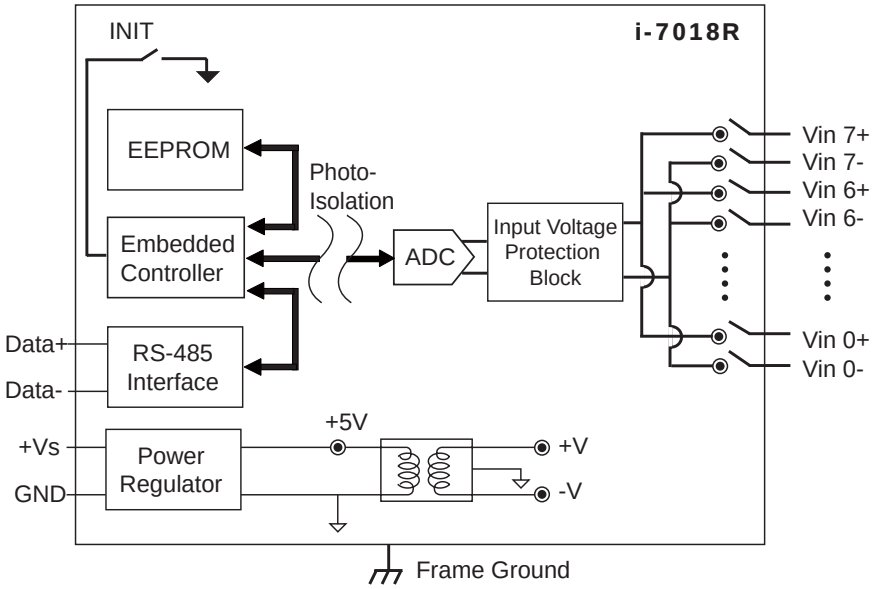
Note : i-7018R is more robust than i-7018/ 7018P/ 7018BL

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

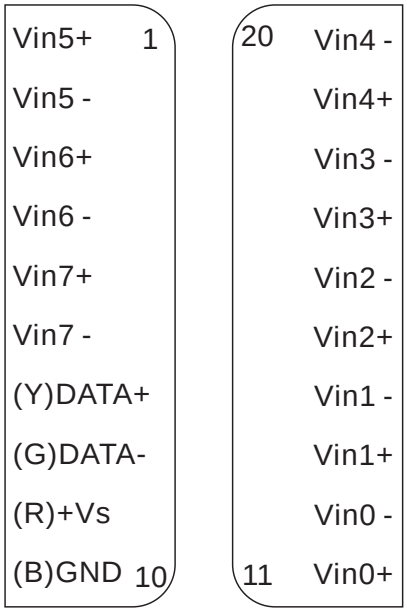
Ordering Information

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

Internal I/O Structure

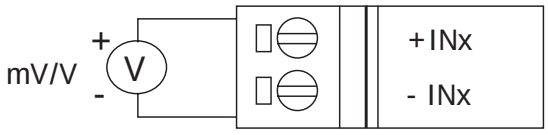


Pin Assignment

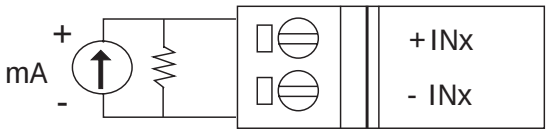


Wire Connection

Voltage Input

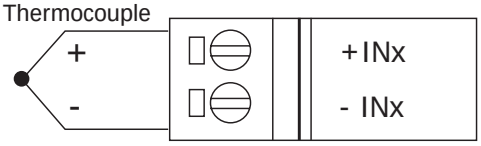


Current Input



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

Thermocouple Input



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

Thermocouple

i-7018Z
DB-1820

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

RoHS

Description

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

CE FC

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		**■ Power**	
1 LED as Power/ Communication Indicator		**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

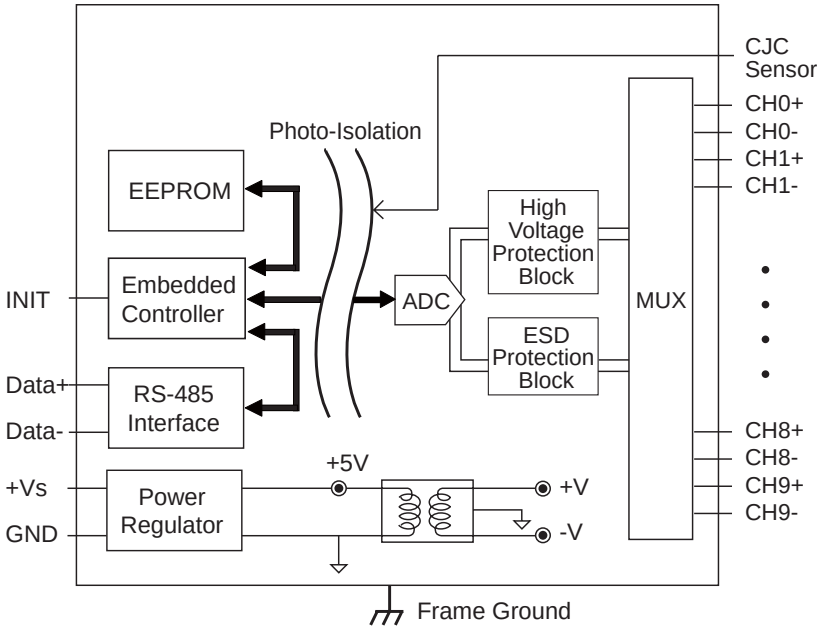
Suggested Accessory

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

CD-2518D

CD-25015

Internal I/O Structure



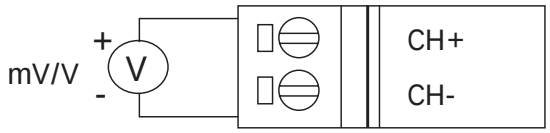
Pin Assignment For i-7018Z

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.

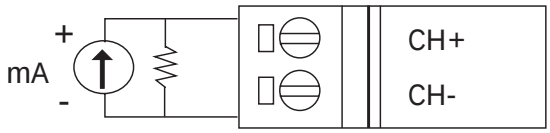
25-Pin Female D-Sub Connector

Wire Connection

Voltage Input

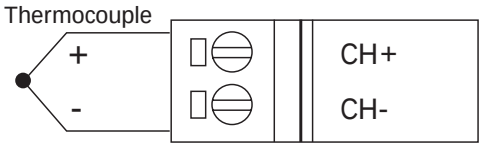


Current Input



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

Thermocouple Input



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

Pin Assignment For DB-1820

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-

Thermocouple

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

i-7019R
i-7019R-G

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.

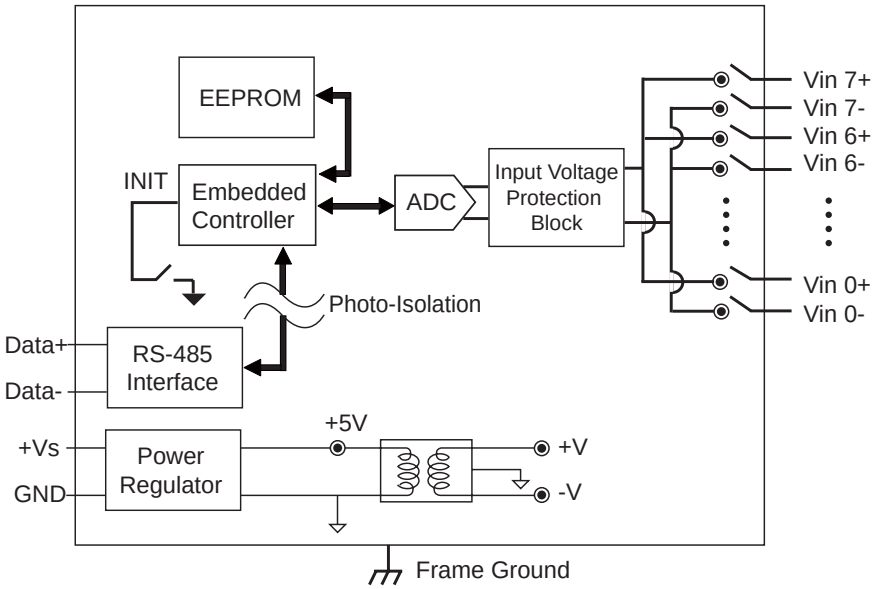
Specifications

■ 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

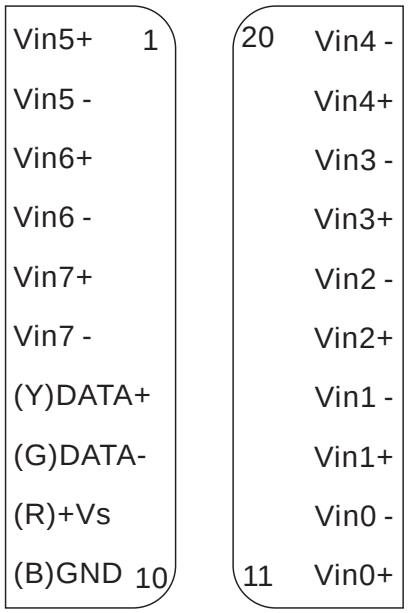
Ordering Information

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

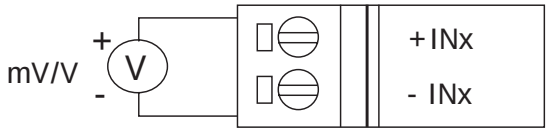


Pin Assignment

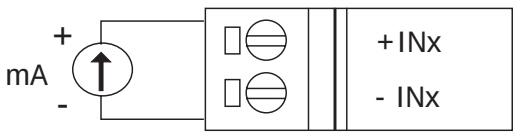


Wire Connection

Voltage Input

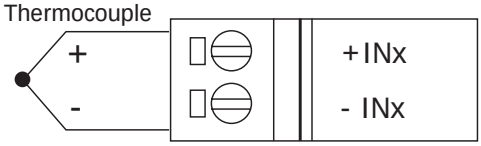


Current Input



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



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

6-channel RTD Input Module

Description

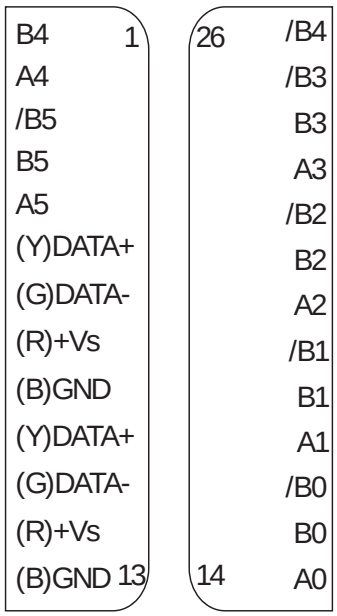
- Measure temperature with RTD sensor
- "G" means gray color
- Support open wire detection

i-7015
i-7015G

Specifications

■ 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	

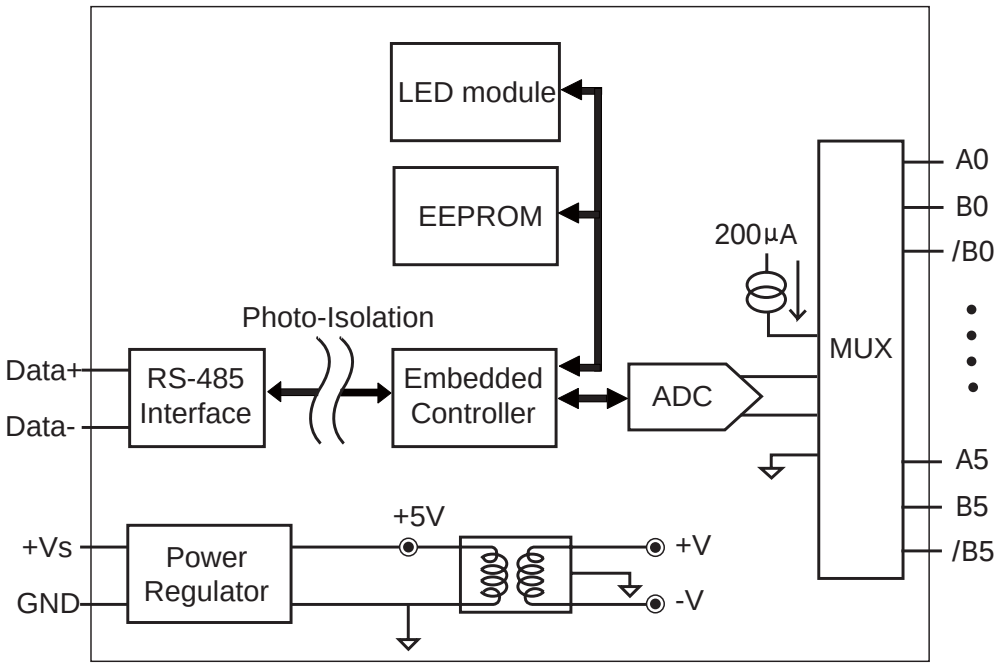
Pin Assignment



Ordering Information

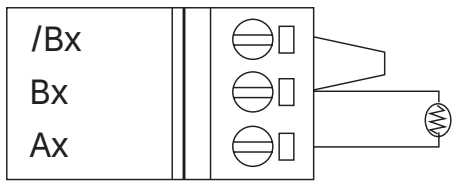
i-7015 CR	6-channel RTD Input Module (RoHS)
i-7015-G CR	6-channel RTD Input Module (Gray cover) (RoHS)

Internal I/O Structure

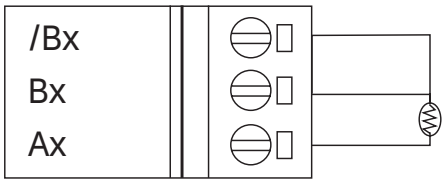


Wire Connection

2 Wire RTD



3 Wire RTD



RTD Type

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

RTD

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

i-7015P

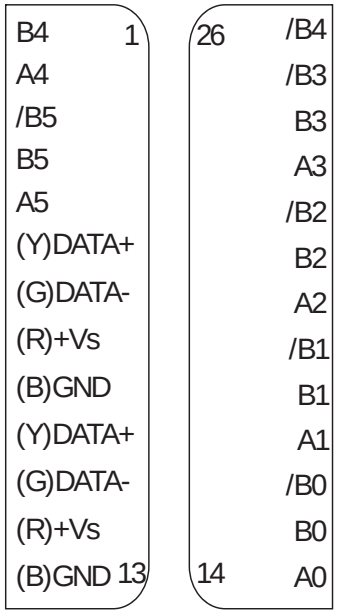
Description

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

Specifications

■ 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	

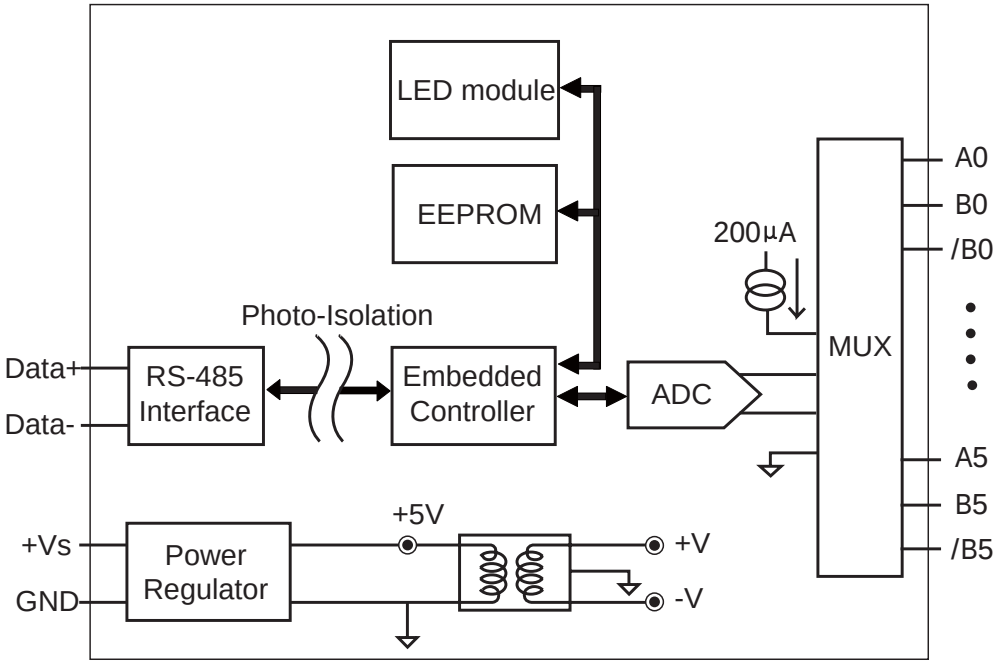
Pin Assignment



Ordering Information

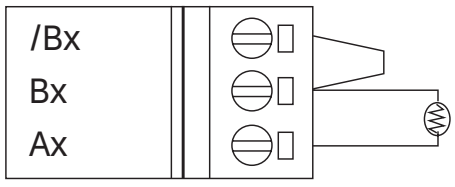
i-7015P-G CR	6-channel RTD Input Module with 3-wire RTD lead resistance elimination (RoHS)

Internal I/O Structure

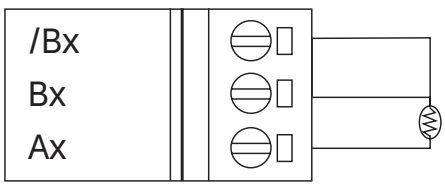


Wire Connection

2 Wire RTD



3 Wire RTD



RTD Type

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

3-channel RTD Input Module

Description

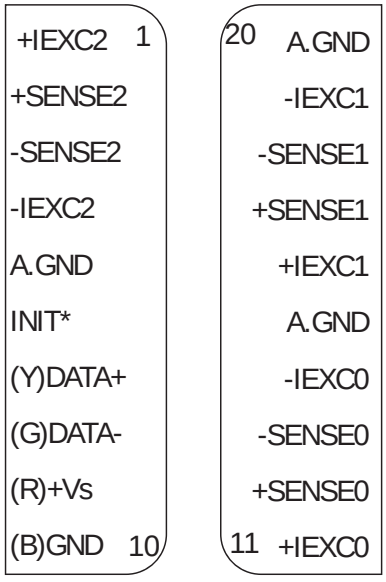
- Measure temperature with RTD sensor
- "D" means it has LED display
- Support open wire detection

i-7033
i-7033D

Specifications

■ Analog Input	
Input channels	3
Input type	RTD
Wire connection	2/3/4 wire
RTD type	Pt100 α=0.00385, Pt100 α=0.003916, Ni120, Pt1000 α=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 μV/ °C
Span drift	+/- 25 μV/ °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)	

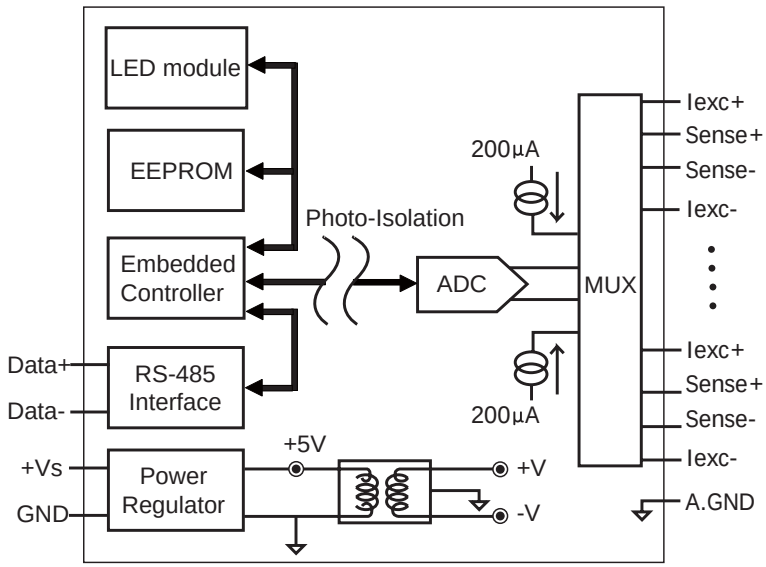
Pin Assignment



Ordering Information

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

Internal I/O Structure

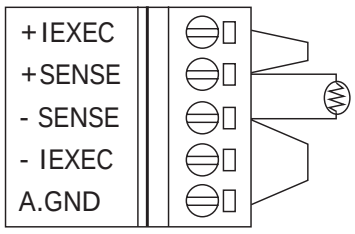


RTD Type

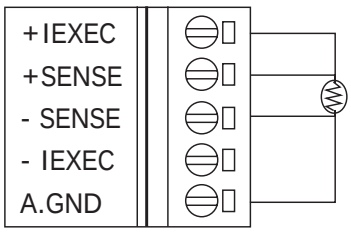
Type Code	Type	Range °C
20	Platinum 100, α= 0.00385	-100~100
21	Platinum 100, α= 0.00385	0~100
22	Platinum 100, α= 0.00385	0~200
23	Platinum 100, α= 0.00385	0~600
24	Platinum 100, α= 0.003916	-100~100
25	Platinum 100, α= 0.003916	0~100
26	Platinum 100, α= 0.003916	0~200
27	Platinum 100, α= 0.003916	0~600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

Wire Connection

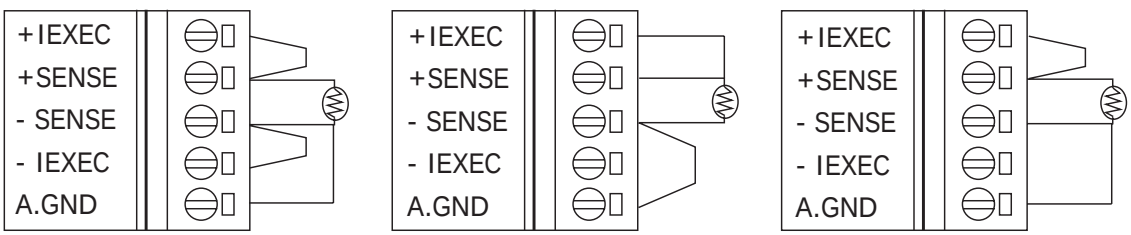
2 Wire RTD



4 Wire RTD



3 Wire RTD



Thermistor

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

i-7005
i-7005G

Description

- Measure temperature with thermistor sensor
- "G" means gray color
- Support open wire detection

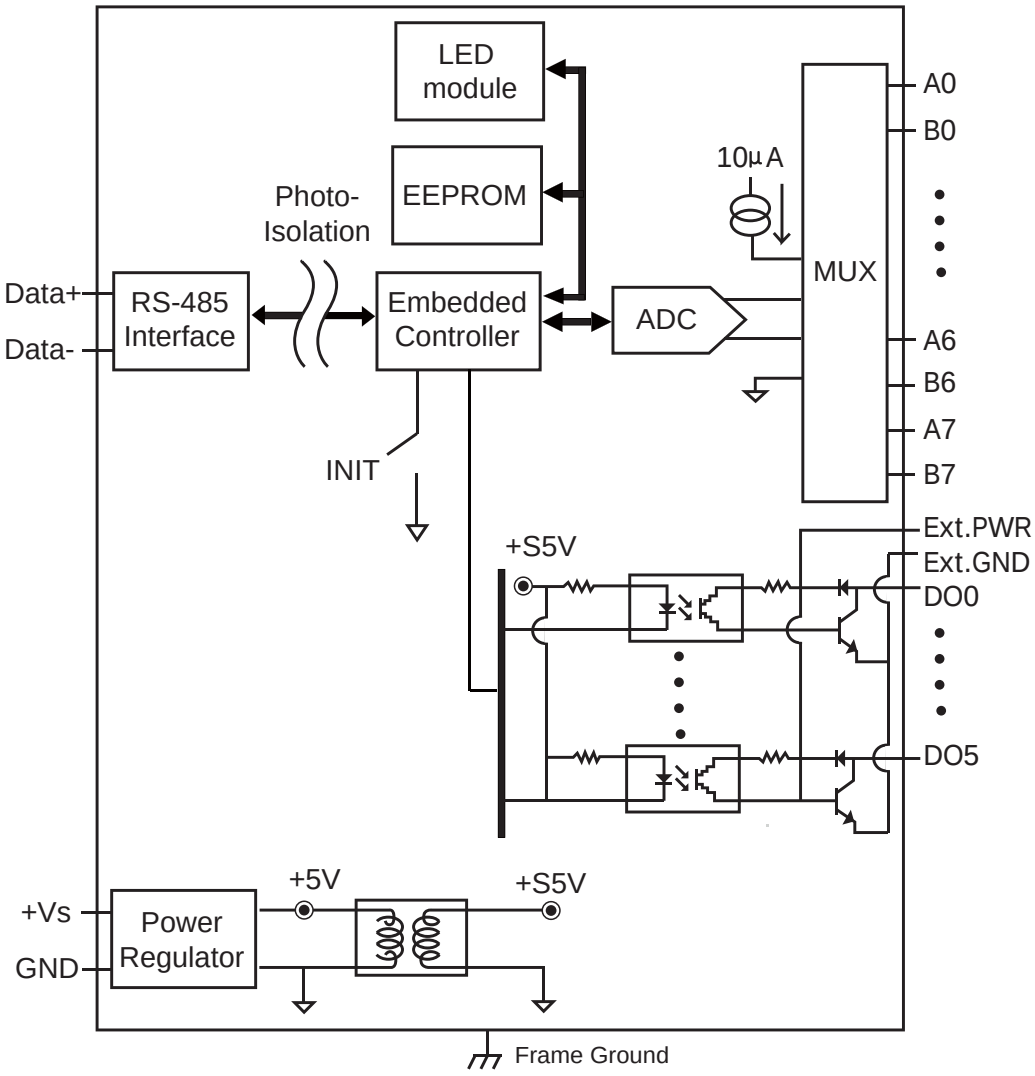
Introduction

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.

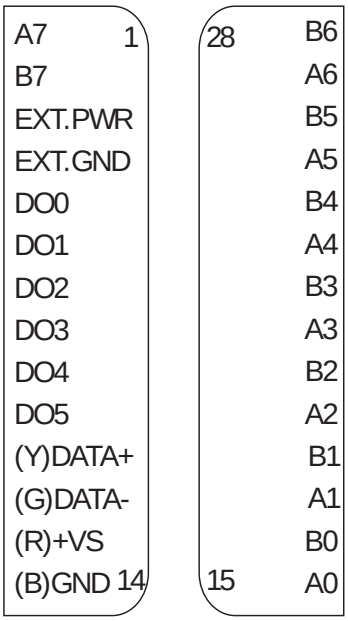
Specifications

■ 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	

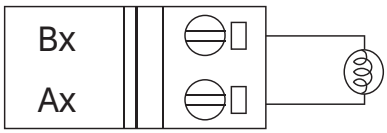
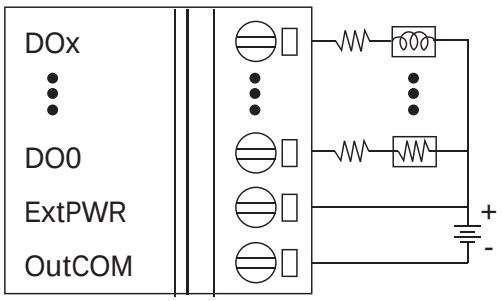
Internal I/O Structure



Pin Assignment



Wire Connection

Thermistor Input	Alarm Output
	

Ordering Information

i-7005 CR	8-channel Thermistor Input and 6 channel Alarm Output Module (Blue cover) (RoHS)
i-7005-G CR	8-channel Thermistor Input and 6 channel Alarm Output Module (Gray cover) (RoHS)

Transmitter

Analog/Transmitter Input with LED Display

Description

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

i-7014D

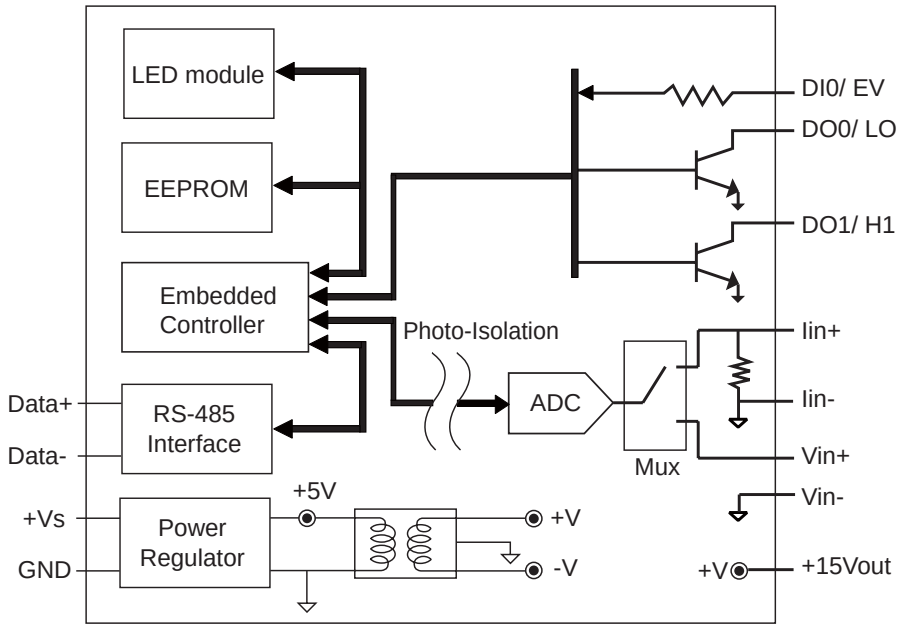
Specifications

■ Analog Input		■ Digital Iutput	
Input channels	1	Channels	1
Input type	+/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V and +/-20mA	Logic level 0	+1V Max
		Logic level 1	3.5V to 30V
Resolution	16-bit	Input frequency	50Hz max
Sampling rate	10 samples/ second	Input pulse width	1mS min.
Band width	5.24 Hz	■ Digital Output	
Accuracy	+/- 0.05% or better	Output channels	2
Zero drift	+/- 20μV/ °C	Output type	Sink, Open Collector to 30V
Isolated loop power	+15Vdc @ 30mA	Output load	30mA
Add Input Impedance	Voltage Input : 30K Ohms Current Input : 125 Ohms	Power dissipation	300mW
■ Power		■ LED Display	
Power consumption	1.9W	4 1/2 digits	

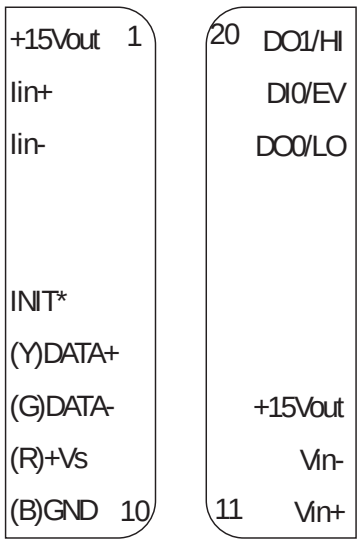
Ordering Information

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

Internal I/O Structure

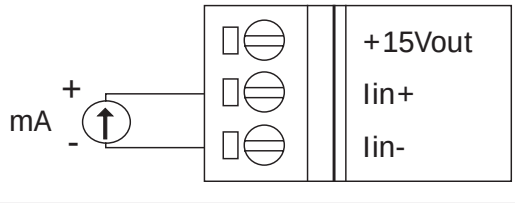


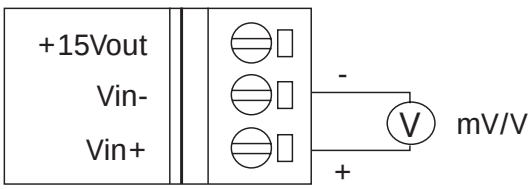
Pin Assignment



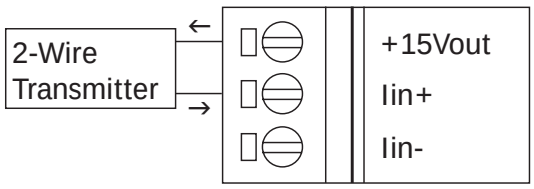
Wire Connection

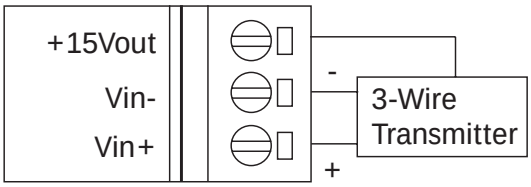
Analog Input



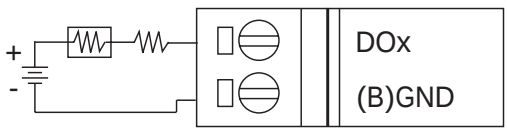


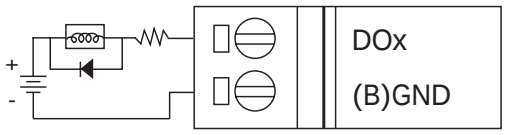
Transmitter





Digital Output





Strain Gauge

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

i-7016/P
i-7016D/PD

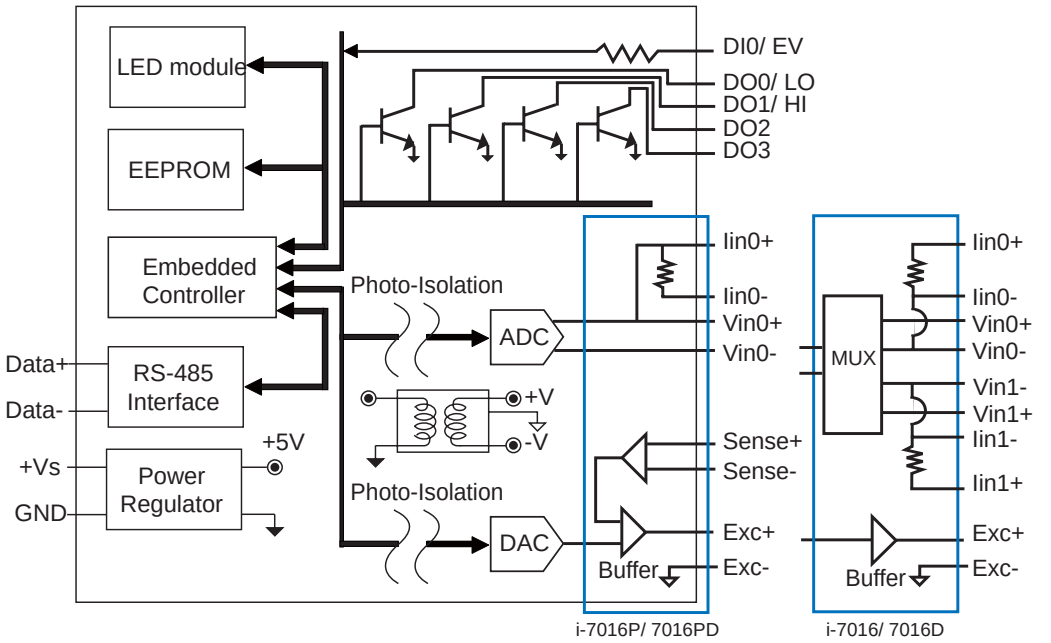
Description

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

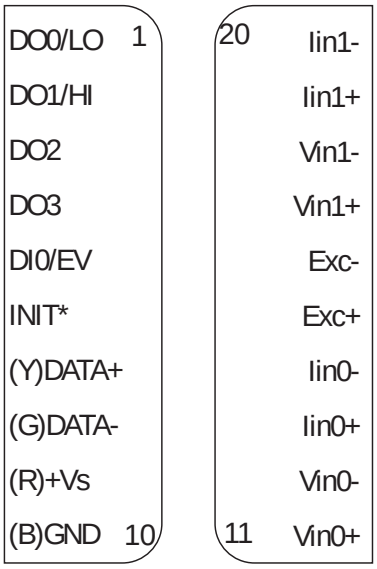
Specifications

■ 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		**■ Power**	
1 LED as Power/ Communication Indicator 4 1/2 digits (for i-7016D/ 16PD)		**Power consumption**	2.4 W (i-7016/16P) 3.0 W (i-7016D/16PD)

Internal I/O Structure

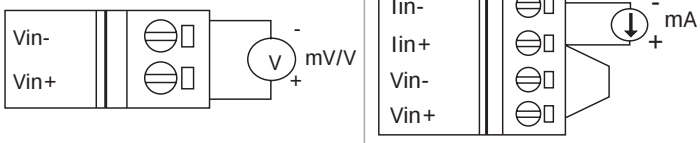


Pin Assignment

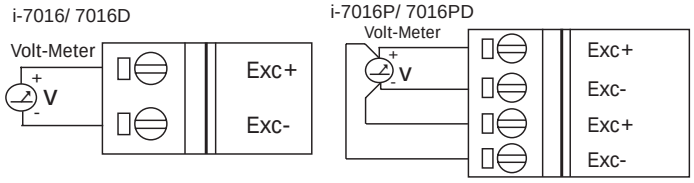


Wire Connection

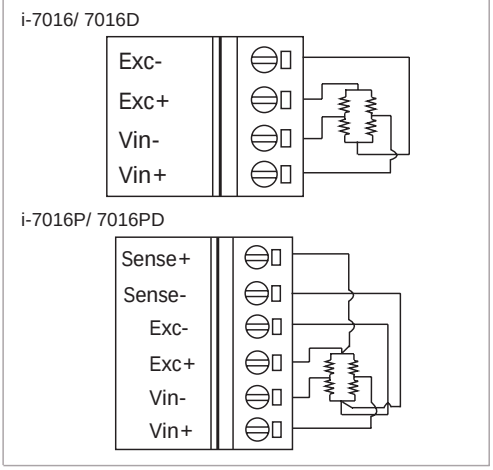
Analog Input



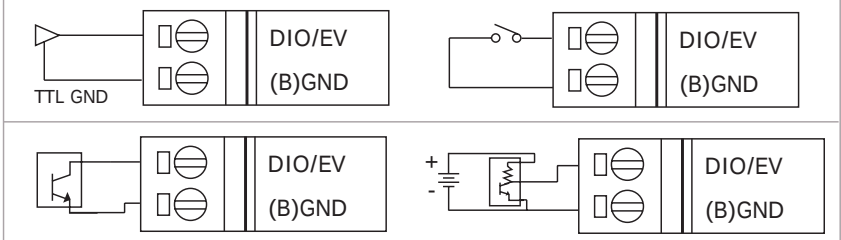
Analog Output



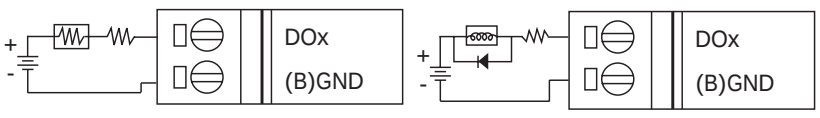
Bridge Sensor/Load Cell/ Strain Gauge



Digital Input



Digital Output



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

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

i-7021
i-7021P

Specifications

● For i-7021/ 21P ● Only for i-7021P

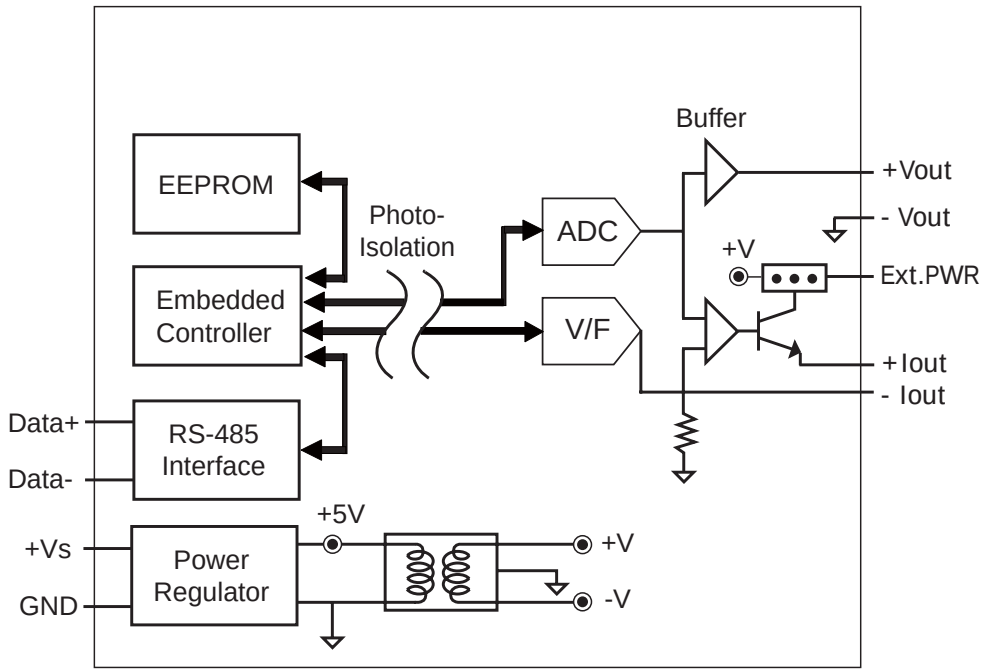
■ Analog Output			
Output channels	1	**Resolution**	12-bit/ 16-bit
Output type	0~20mA , 4~20mA and 0~10V	**Programmable output slope**	0.125 to 2048/ 1024 mA/ second 0.0625 to 1024/ 512 V/ second
Zero drift	Current output : +/-0.2uA/°C Voltage output : +/-30, +/-10uV/°C	**Current load resistance**	Internal 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

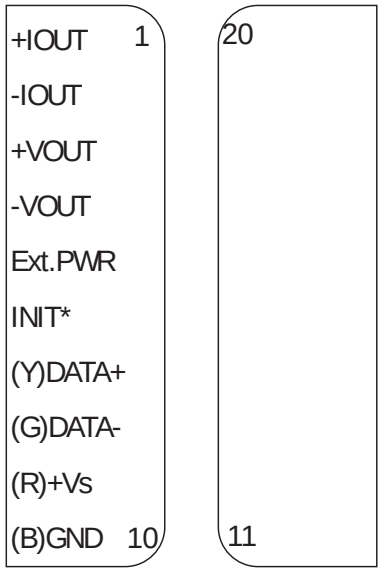
Ordering Information

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

Internal I/O Structure

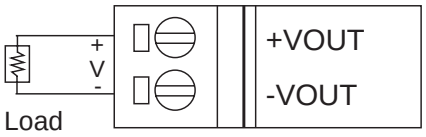


Pin Assignment

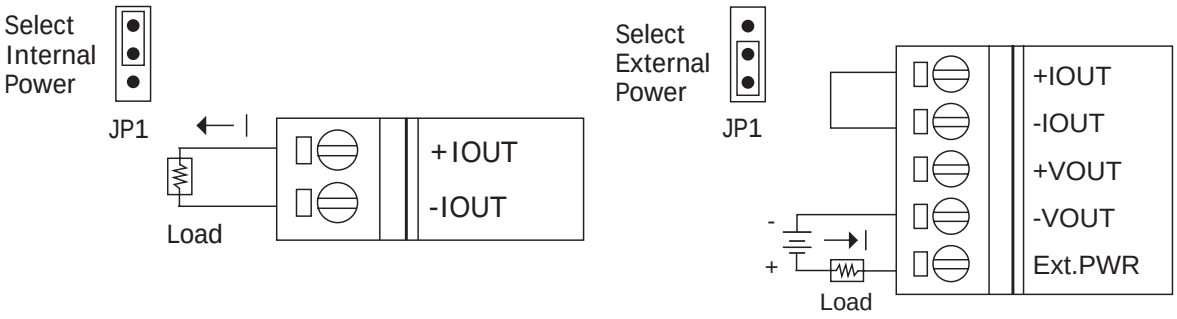


Wire Connection

Voltage Output Wiring



Current Output Wiring



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

Analog Output

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

Description

- Slew rate of AO channels are programmable

i-7022

Specifications

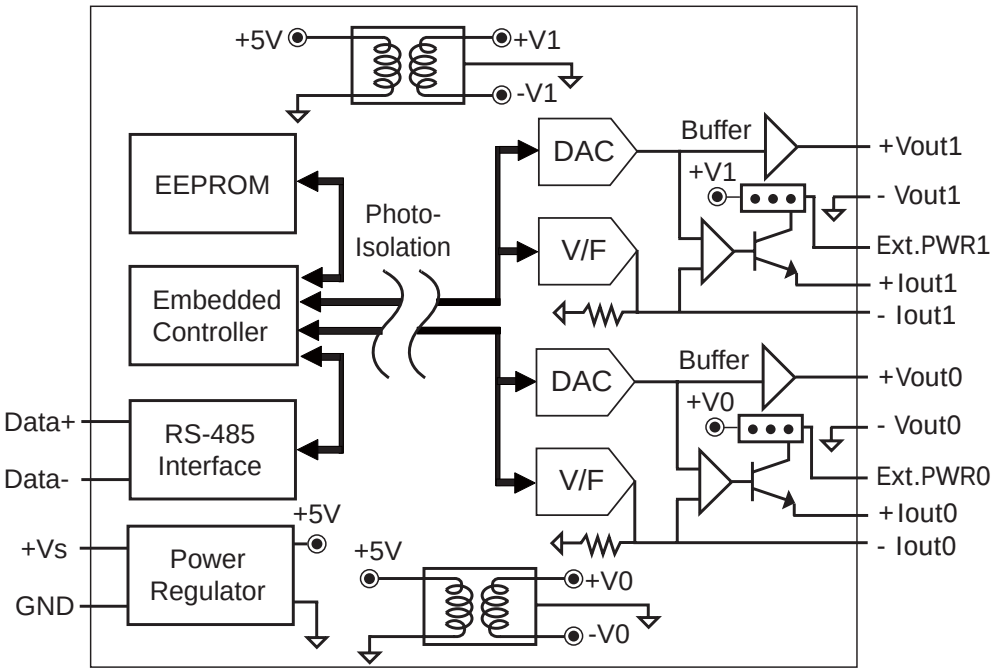
■ Analog Output			
Output channels	2, Channel to channel isolation	**Resolution**	12-bit
Output type	0~20mA , 4~20mA and 0~10V	**Programmable output slope**	0.125 to 1024 mA/ second 0.0625 to 512 V/ second
Zero drift	Current output : +/-0.2uA/°C Voltage output : +/-30V/°C	**Current load resistance**	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	■ Power Consumption
1 LED as Power/ Communication Indicator	3.0W

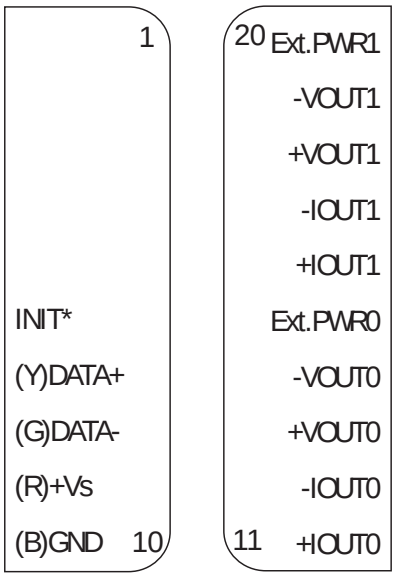
Ordering Information

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

Internal I/O Structure

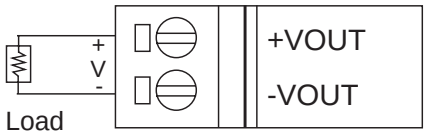


Pin Assignment

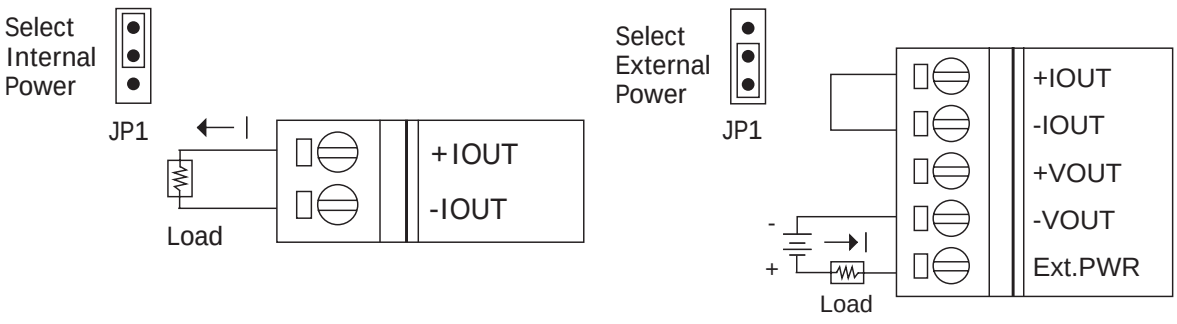


Wire Connection

Voltage Output Wiring



Current Output Wiring



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

Analog Output

4-channel 14-bit AnalogOutput Module

i-7024

Description

- Slew rate of AO channels are programmable

Specifications

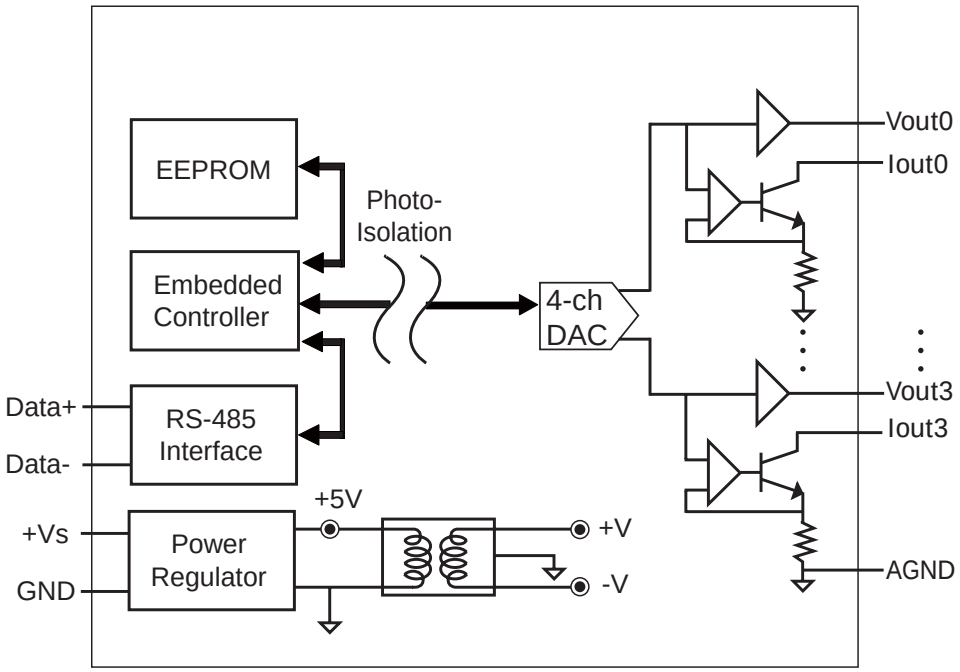
■ Analog Output			
Output channels	4	**Resolution**	14-bit
Output type	0~20mA, 4~20mA, 0~5V, +/-5V, 0~10V, +/-10V	**Programmable output slope**	0.125 to 2048 mA/ second 0.0625 to 1024 V/ second
Zero drift	Current output : +/-0.2uA/°C Voltage output : +/-30V/°C	**Current load resistance**	External +24V 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	■ Power Consumption
1 LED as Power/ Communication Indicator	2.3W

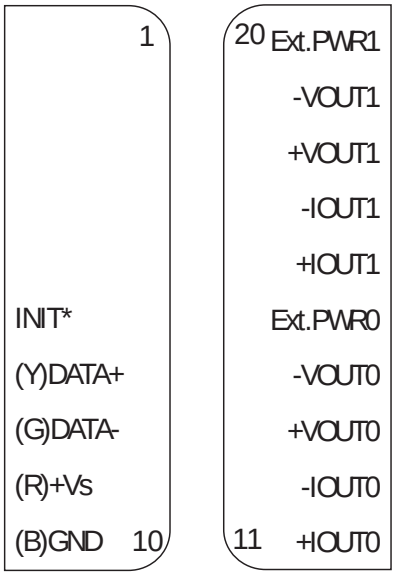
Ordering Information

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

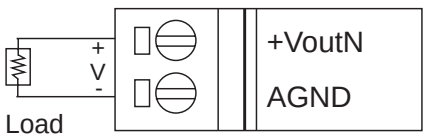
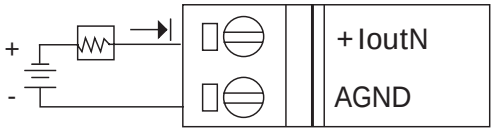
Internal I/O Structure



Pin Assignment



Wire Connection

Voltage Output	Current Output
	

DC Digital Input

14-channel **Isolated** Digital Input Module

i-7041
i-7041D

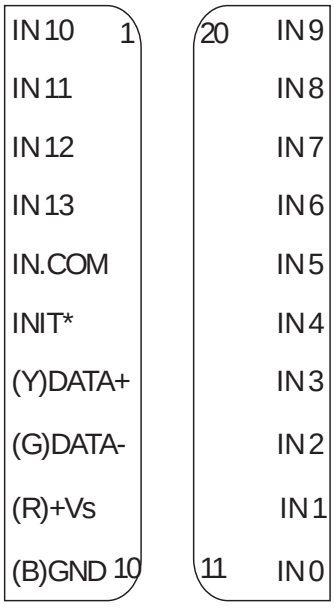
Description

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

Specifications

■ Digital Input	
Input channels	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)	

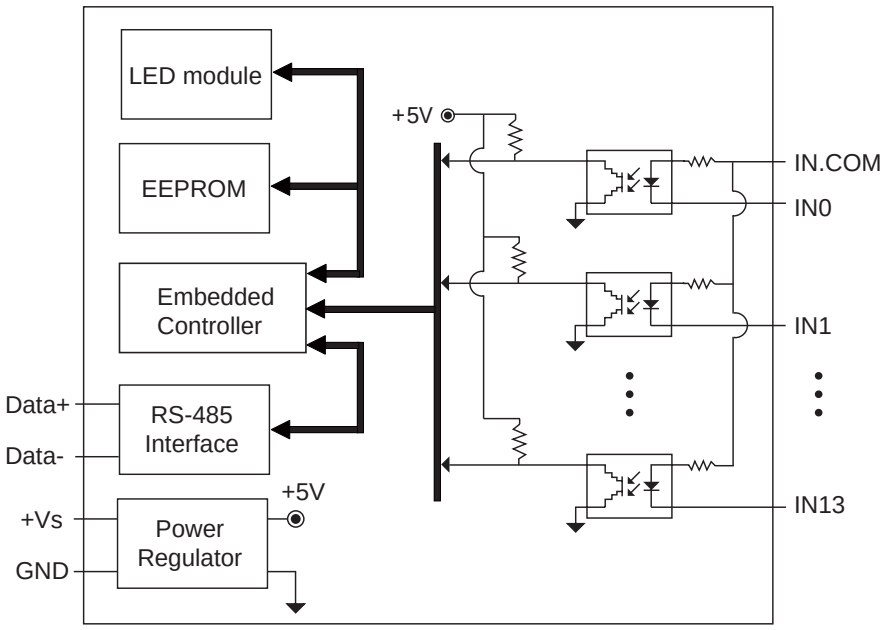
Pin Assignment



Ordering Information

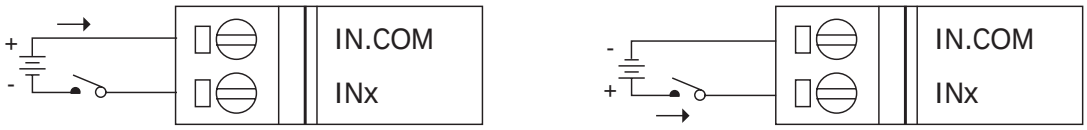
i-7041 CR	14-channel Isolated Digital Input Module (RoHS)
i-7041D CR	14-channel Isolated Digital Input Module with LED Display (RoHS)

Internal I/O Structure

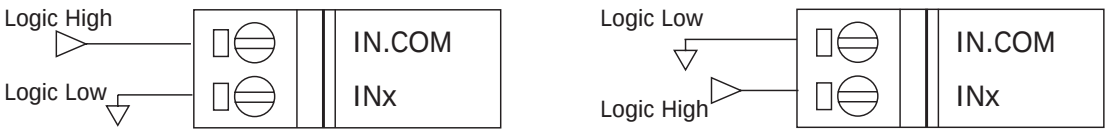


Wire Connection

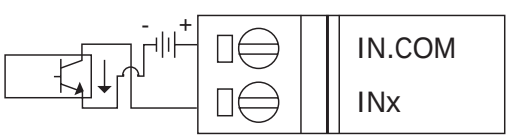
Dry Contact



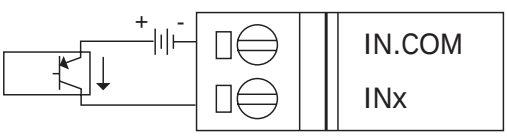
TTL/CMOS



NPN Output



PNP Output



DC Digital Input

16-channel **Isolated** Digital Input Module

i-7051
i-7051D

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

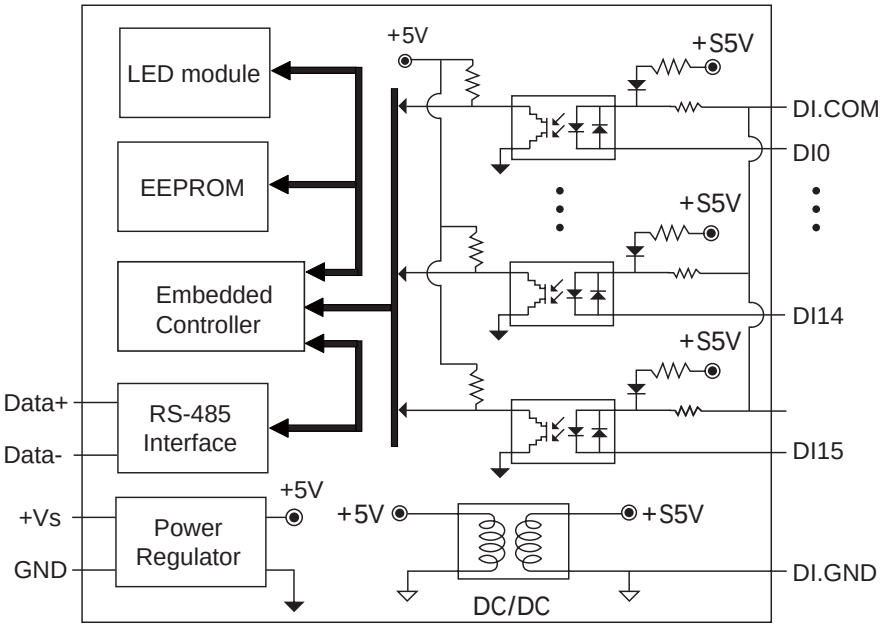
Introduction

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.

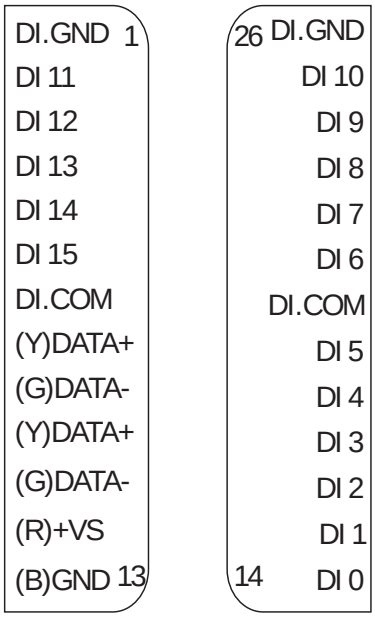
Specifications

■ 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

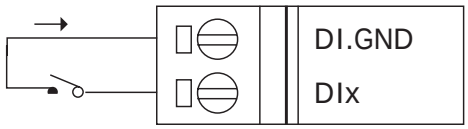


Pin Assignment

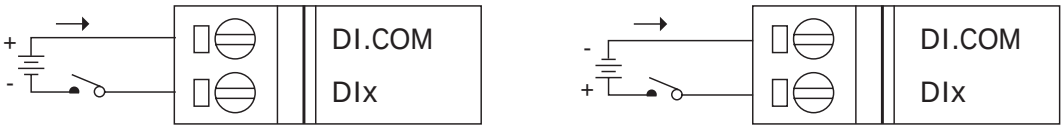


Wire Connection

Dry Contact



Wet Contact



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)

DC Digital Input

8-channel **Isolated** Digital Input Module

i-7052
i-7052D

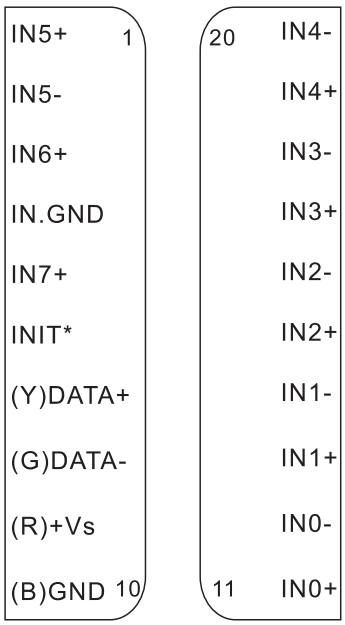
Description

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

Specifications

■ Digital Input	
Input channels	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)	

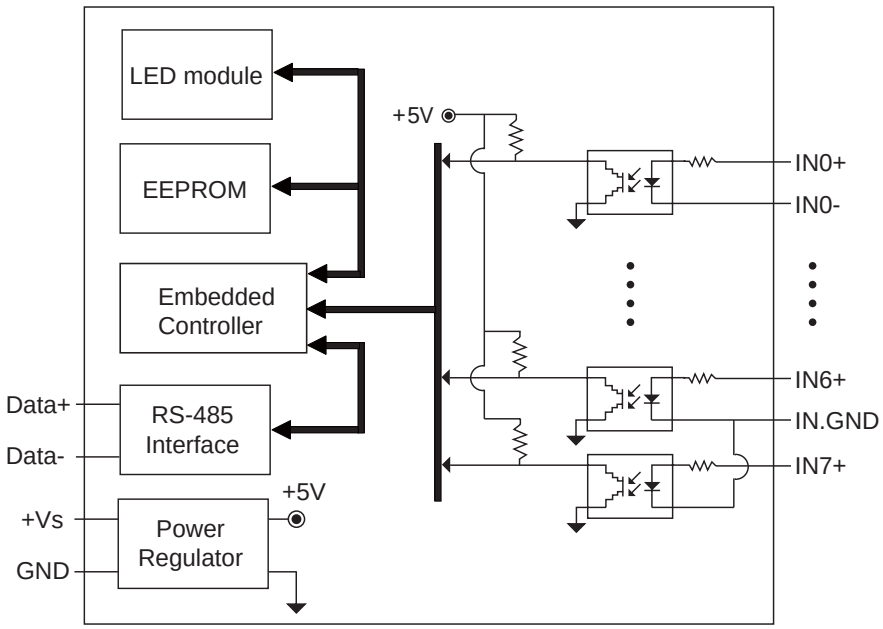
Pin Assignment



Ordering Information

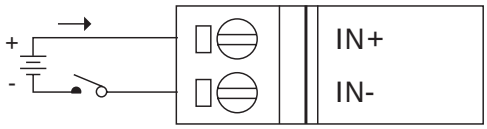
i-7052 CR	8-channel Isolated Digital Input Module (RoHS)
i-7052D CR	8-channel Isolated Digital Input Module with LED Display (RoHS)

Internal I/O Structure

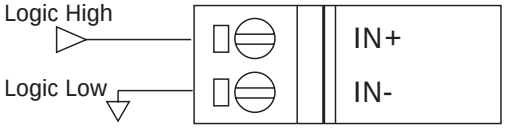


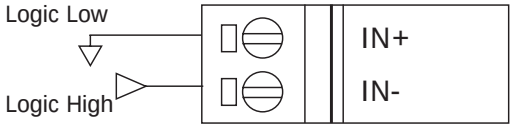
Wire Connection

Wet Contact

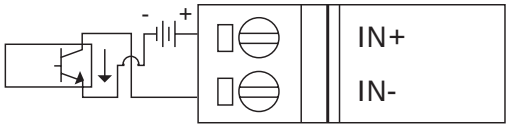


TTL/CMOS

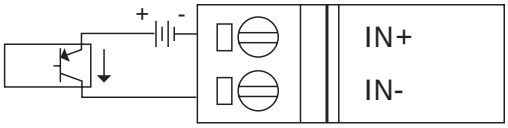




NPN Output



PNP Output



DC Digital Input

16-channel Non-Isolated Digital Input Module

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

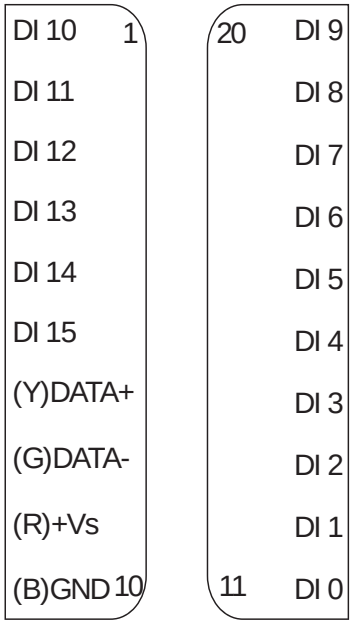
Description

- 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

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)	

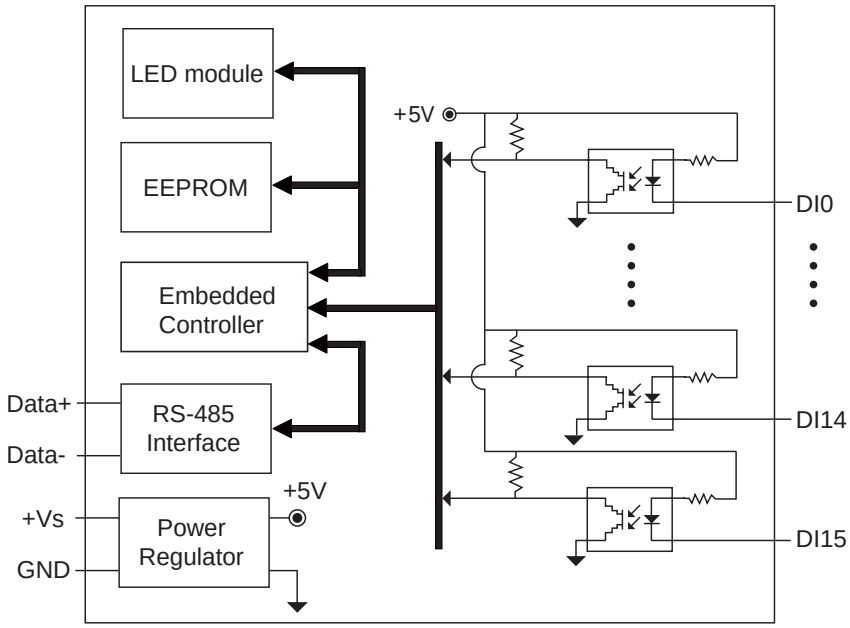
Pin Assignment



Ordering Information

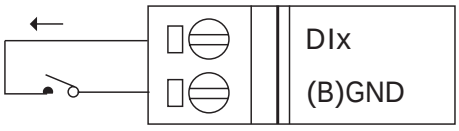
i-7053_FG CR	16-cannel Non-Isolated Digital Input Module (RoHS)
i-7053D_FG CR	16-cannel Non-Isolated Digital Input Module with LED Display (RoHS)
i-7053_FG-G CR	16-cannel Non-Isolated Digital Input Module (Gray cover) (RoHS)
i-7053D_FG-G CR	16-cannel Non-Isolated Digital Input Module with LED Display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

Internal I/O Structure

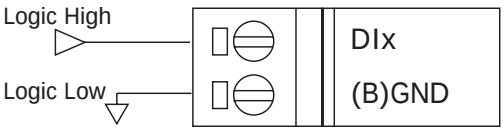


Wire Connection

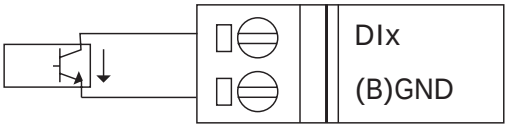
Wet Contact



TTL/CMOS



Open Collector



AC Digital Input

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

i-7058
i-7058D

Description

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

Introduction

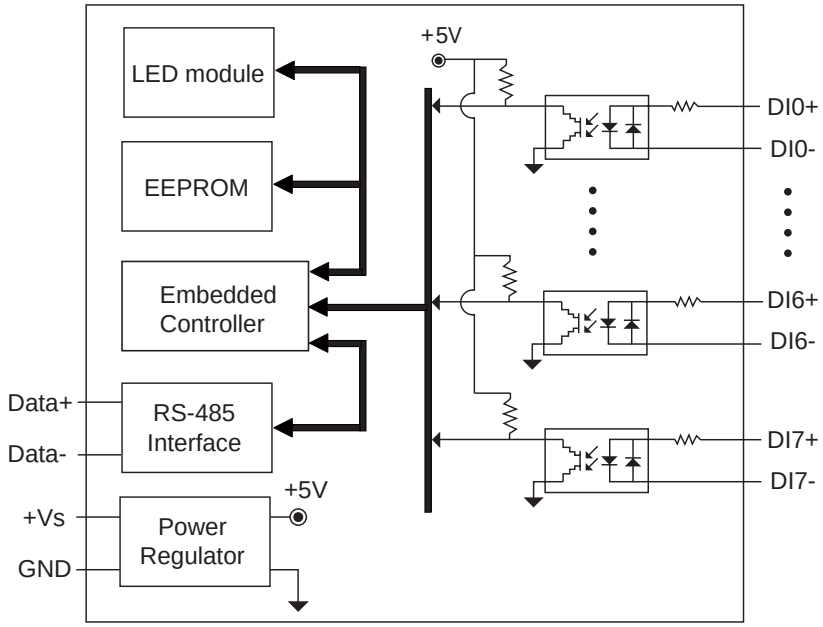
i-7058/D is a cost-effective solution for a wide range of valuable industrial control signals and systems. The DCON utility can help users to configure and test i-7058 (8 channel Isolated digital Input module). Plenty of library functions and demo programs are provided to let users develop programs easily 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

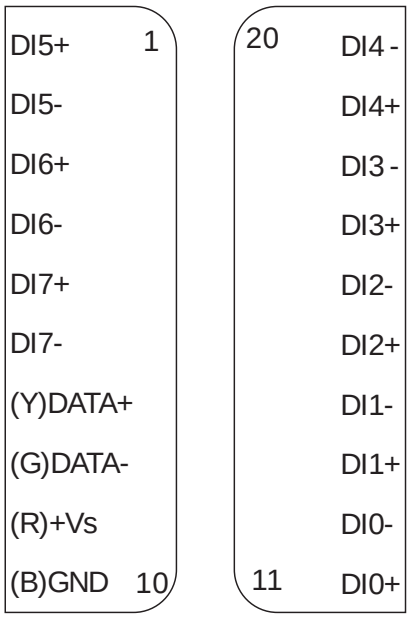
■ Digital Input			
Input channels	8	**Input type**	AC, Differential, isolated
Counters	Channels: 8 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms	**On voltage level**	80 ~ 250VAC
		Off voltage level	20VAC max.
AC frequency	50~60Hz (> 45Hz Min.)	**Input impedance**	68K 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

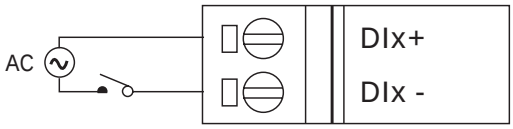


Pin Assignment



Wire Connection

Digital Input



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

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)

i-7059
i-7059D

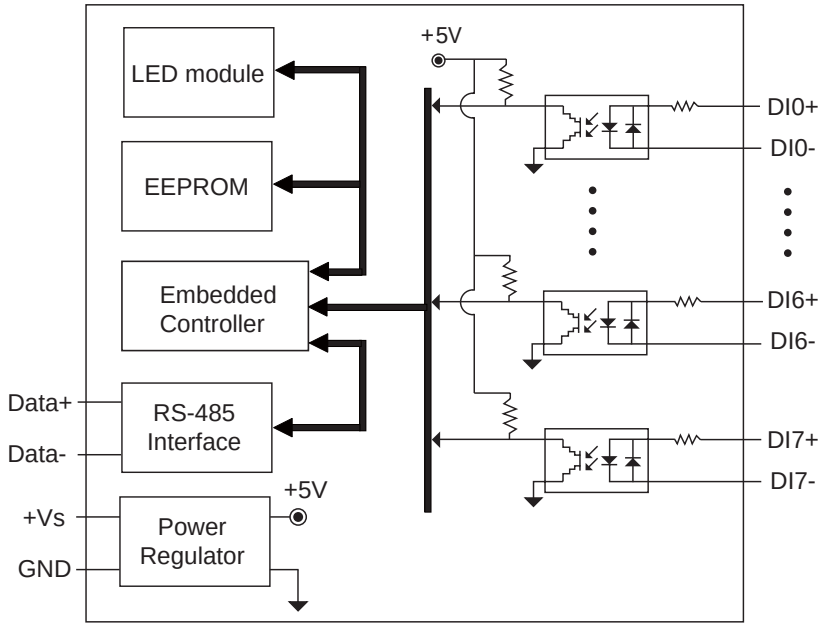
Introduction

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.

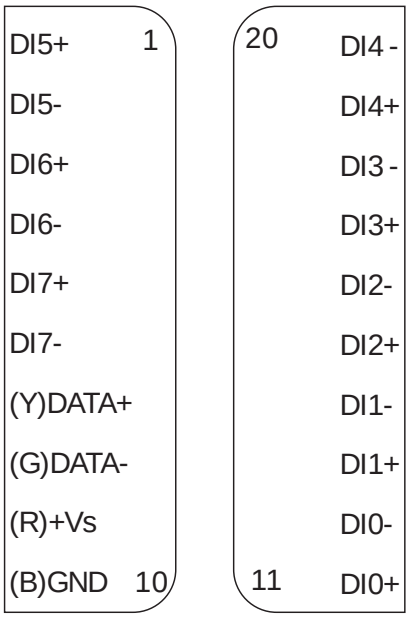
Specifications

■ 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
		Off voltage level	3 VAC max.
AC frequency	47~400Hz (> 45Hz min)	**Peak voltage**	70 VAC
Photo-isolation	5000Vrms	**Input impedance**	10K Ohm, 0.5W
■ LED Display		**■ Power**	
1 LED as Power/ Communication Indicator 8 LEDs as Digital Input indicators (for i-7059D)		**Power consumption**	0.3W (max.) (i-7059) / 0.7W (max.) (i-7059D)

Internal I/O Structure

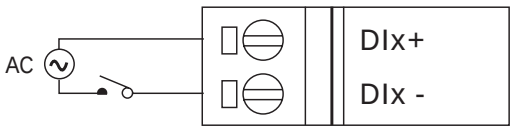


Pin Assignment



Wire Connection

Digital Input



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

DC Digital Output

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

Description

- DC Output Module
- "D" means with LED Display.

i-7042
i-7042D

Introduction

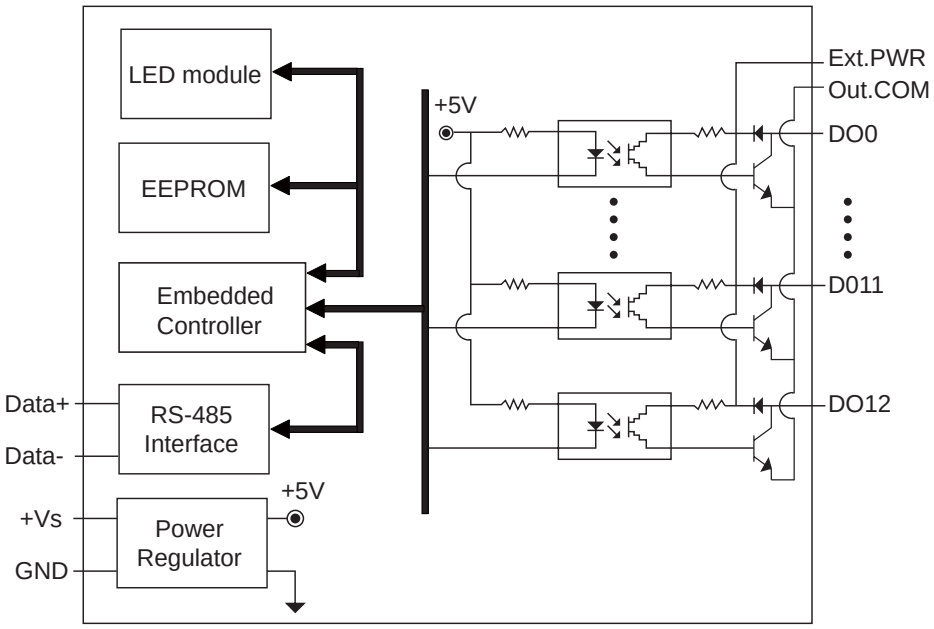
i-7042/D is a cost-effective solution for a wide range of valuable industrial control signals and systems. The DCON utility can help users to configure and test i-7042 Isolated O.C. Output modules. Plenty of library functions and demo programs are provided to let users develop programs easily under Windows, 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

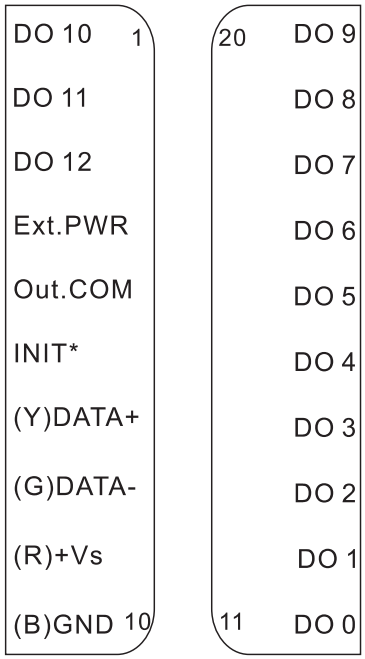
Digital Output			
Input channels	13	Output type	Isolation Open Collector
Output voltage	30V max.	Isolation voltage	3750V
Output current	100mA per channel, Direct drive power relay module		

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

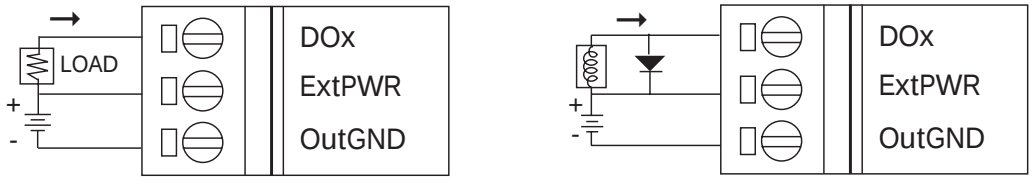


Pin Assignment



Wire Connection

Open Collector Output



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

Description

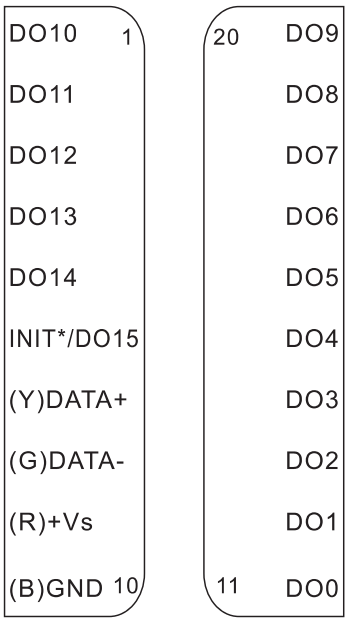
- DC Output Module
- "D" means with LED Display.

i-7043
i-7043D

Specifications

■ 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)	

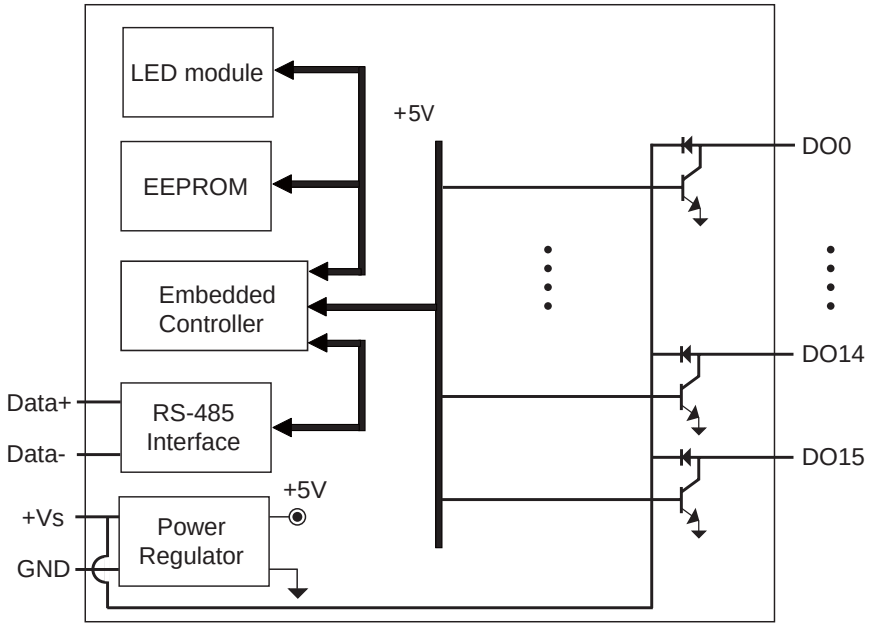
Pin Assignment



Ordering Information

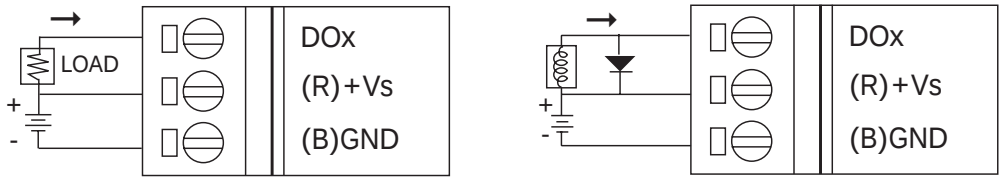
i-7043 CR	16-channel Non-isolated O.C. Output Module (RoHS)
i-7043D CR	16-channel Non-isolated O.C. Output Module with LED Display (RoHS)

Internal I/O Structure



Wire Connection

Open Collector Output



i-7000 DO Modules

DC Digital Output

16-channel **Isolated** Digital Output Module

Description

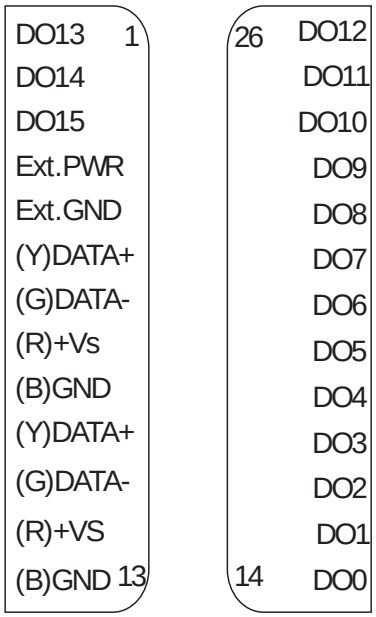
- DC Output Module
- "D" means with LED Display.

i-7045
i-7045D

Specifications

■ 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)	

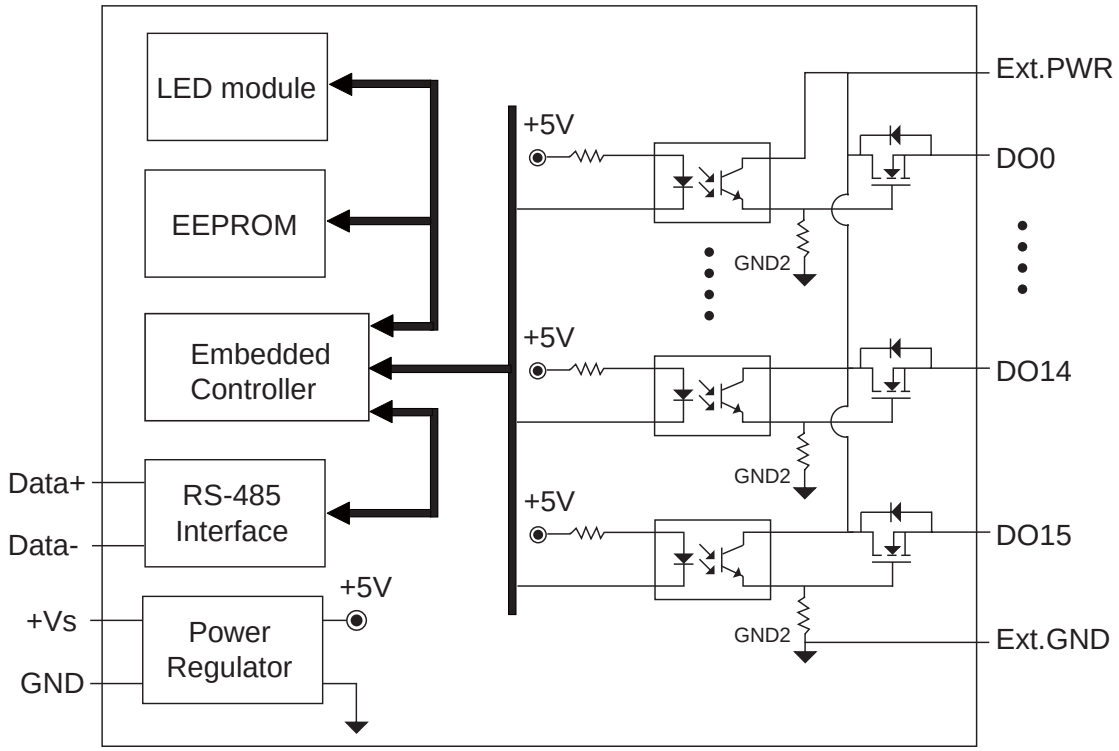
Pin Assignment



Ordering Information

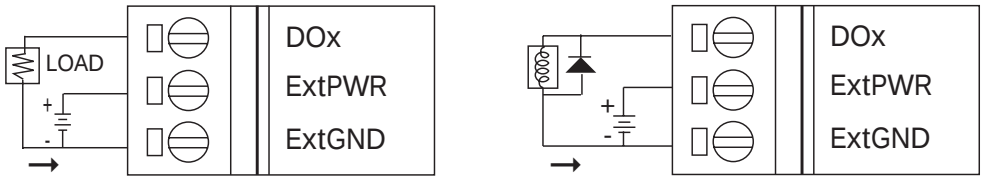
i-7045	16-channel Isolated Digital Output Module
i-7045D	16-channel Isolated Digital Output Module with LED Display

Internal I/O Structure



Wire Connection

Digital Output



i-7000 DI/DO Modules

DC Digital Input and Output

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

Description

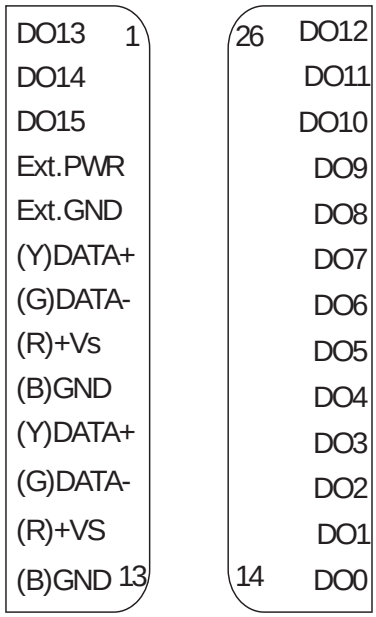
- DI channels can be used to get status and low speed (100Hz Max.) counts
- "D" means with LED Display.

i-7044
i-7044D

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)

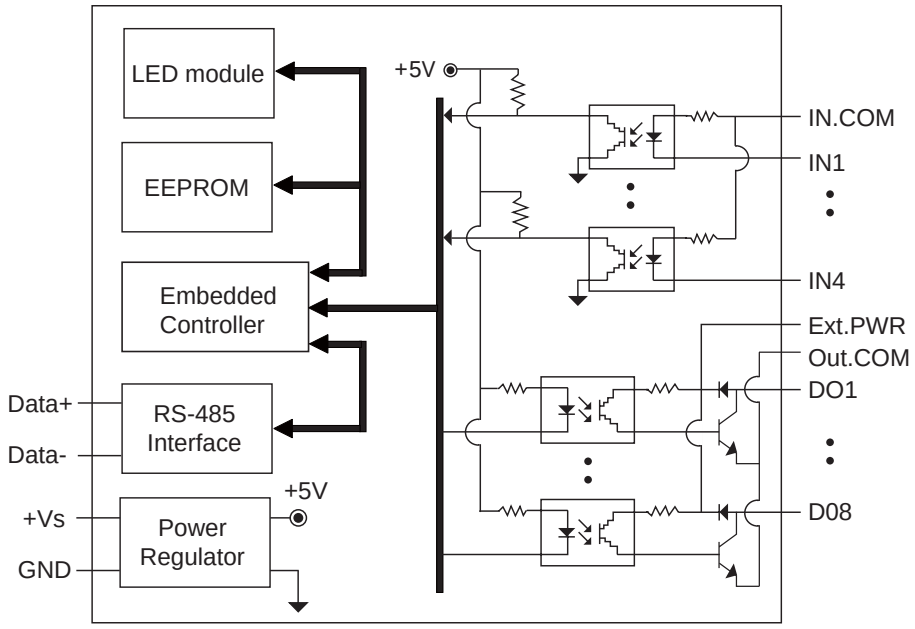
Pin Assignment



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)

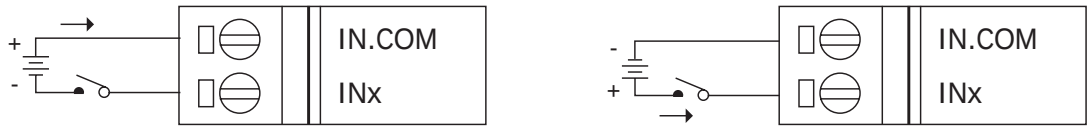
Internal I/O Structure



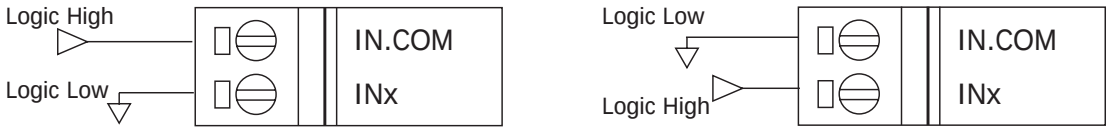
Wire Connection

Input Type

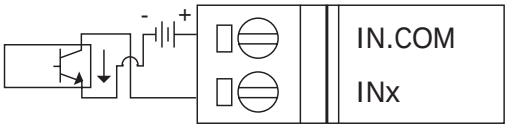
Dry Contact Signal Input



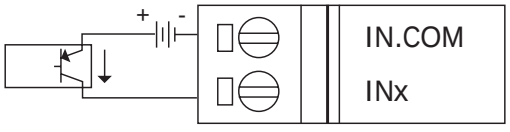
TTL/CMOS Signal Input



NPN Output

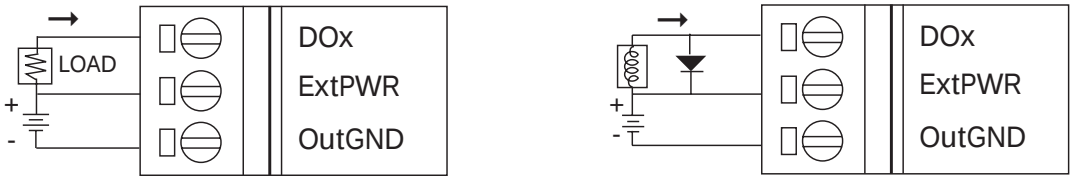


PNP Output



Output Type

Open Collector



DC Digital Input and Output

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

RoHS

i-7050
i-7050D

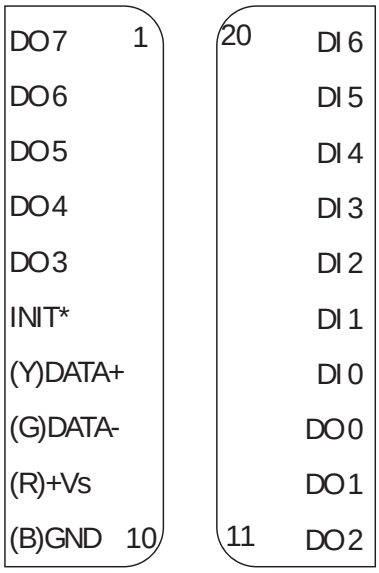
Description

- 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	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)

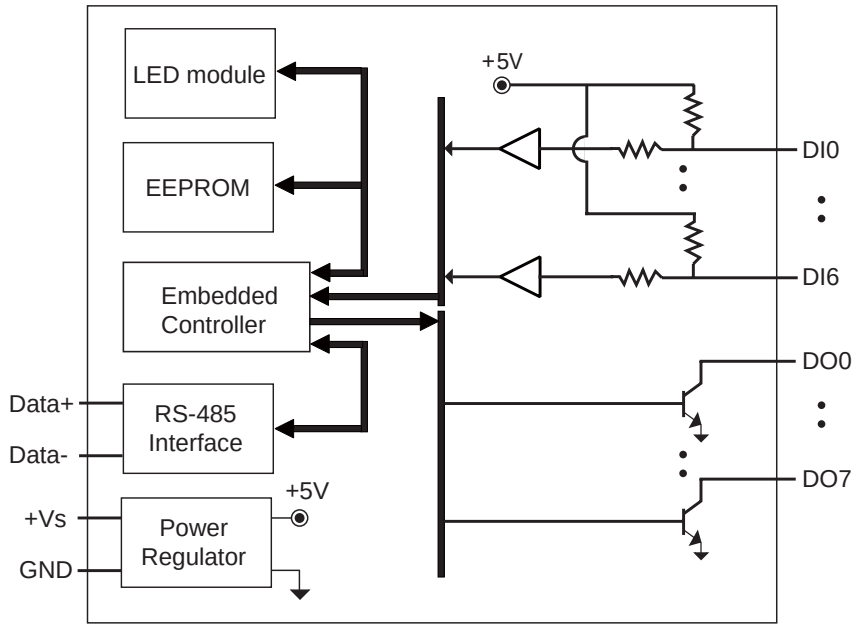
Pin Assignment



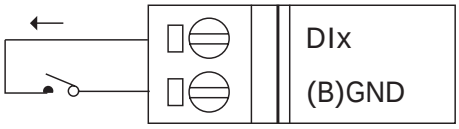
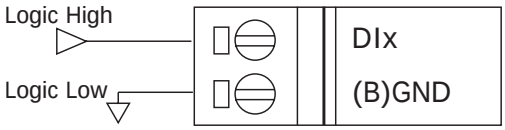
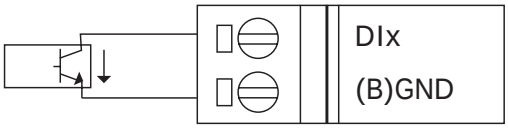
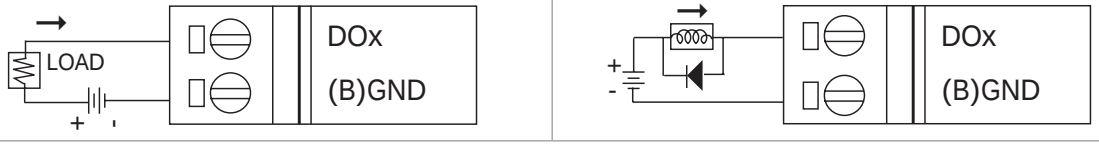
Ordering Information

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	
	Open Collector	
Output Type	Open Collector	

i-7000 DI/DO Modules

DC Digital Input and Output

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

Description

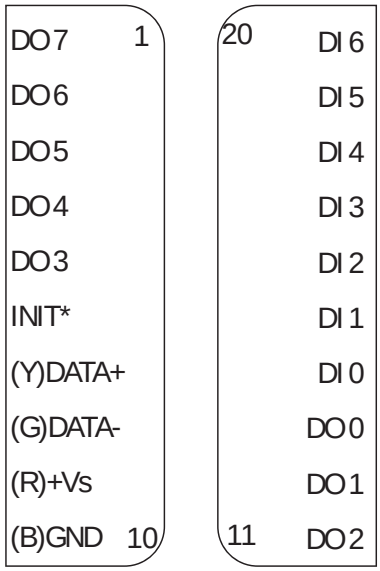
- DI channels can be used to get status and low speed (100Hz Max.) counts
- "D" means with LED Display.

i-7050A
i-7050AD

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)

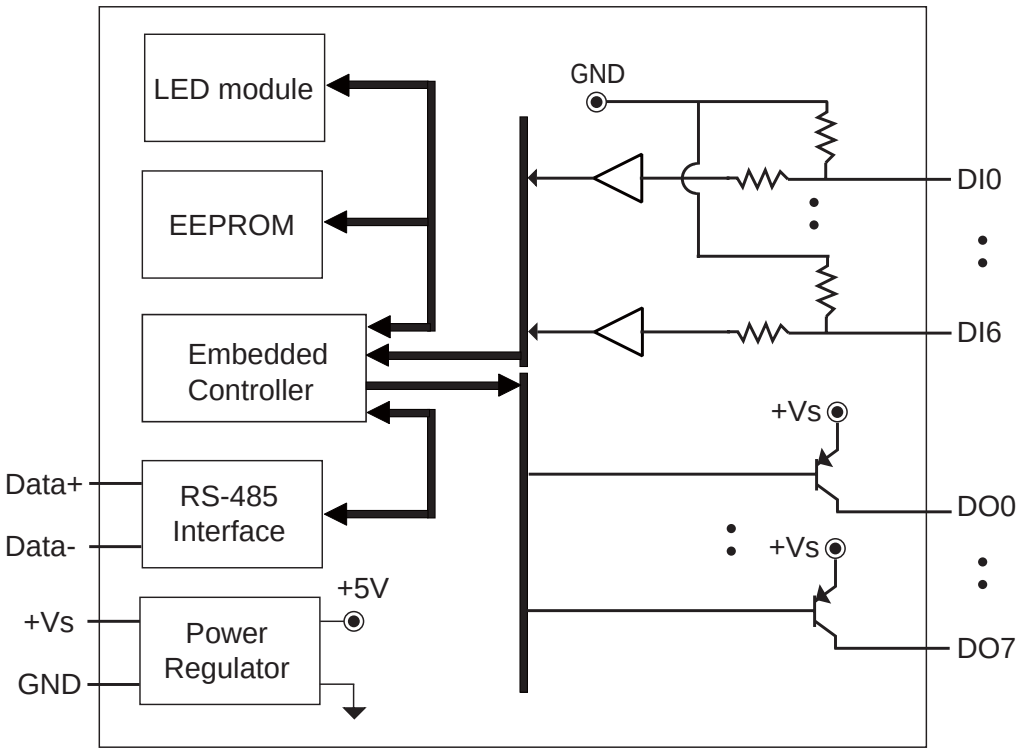
Pin Assignment



Ordering Information

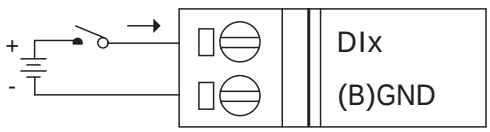
i-7050A CR	7-channel Digital Input & 8-channel Digital Output Module (Current Source) (RoHS)
i-7050AD CR	7-channel Digital Input & 8-channel Digital Output Module with LED Display (Current Source) (RoHS)

Internal I/O Structure



Wire Connection

Digital Input



Digital Output

i-7000 DI/DO Modules

DC Digital Input and Output

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

Description

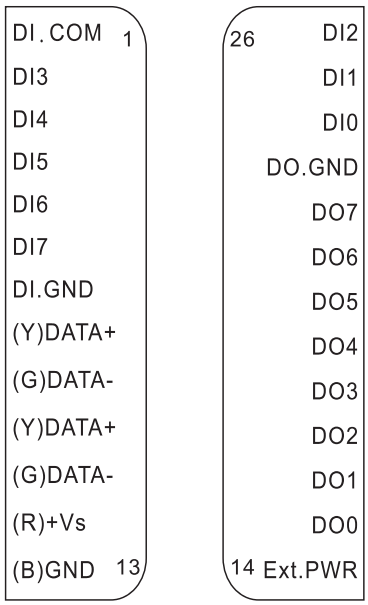
- DI channels can be used to get status and low speed (100Hz Max.) counts
- "D" means with LED Display.
- Support short circuit protection

i-7055
i-7055D

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)	

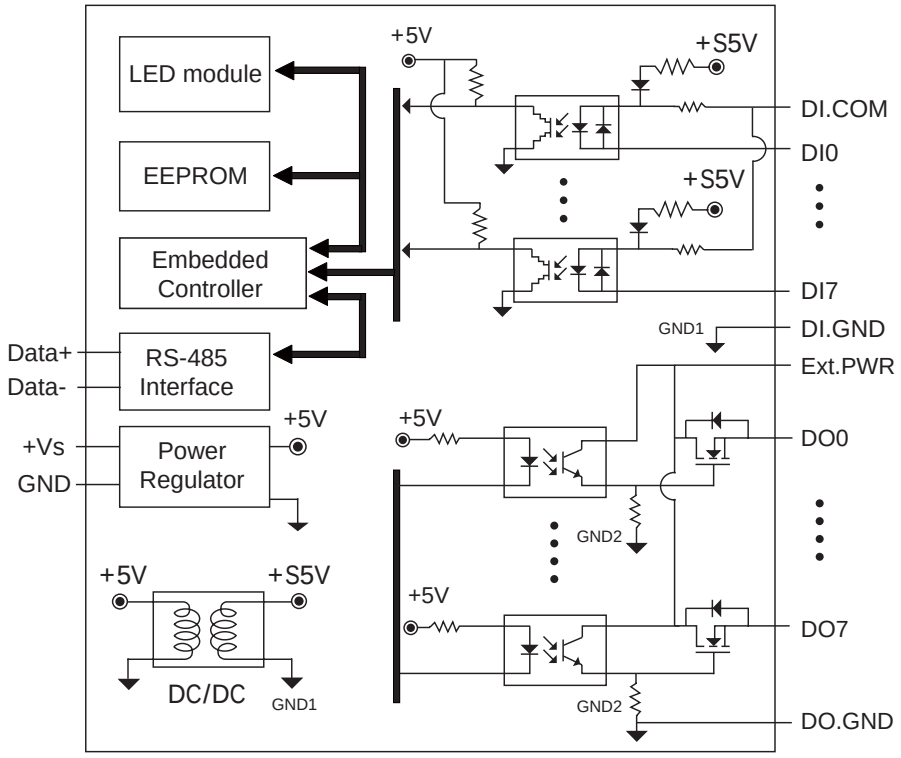
Pin Assignment



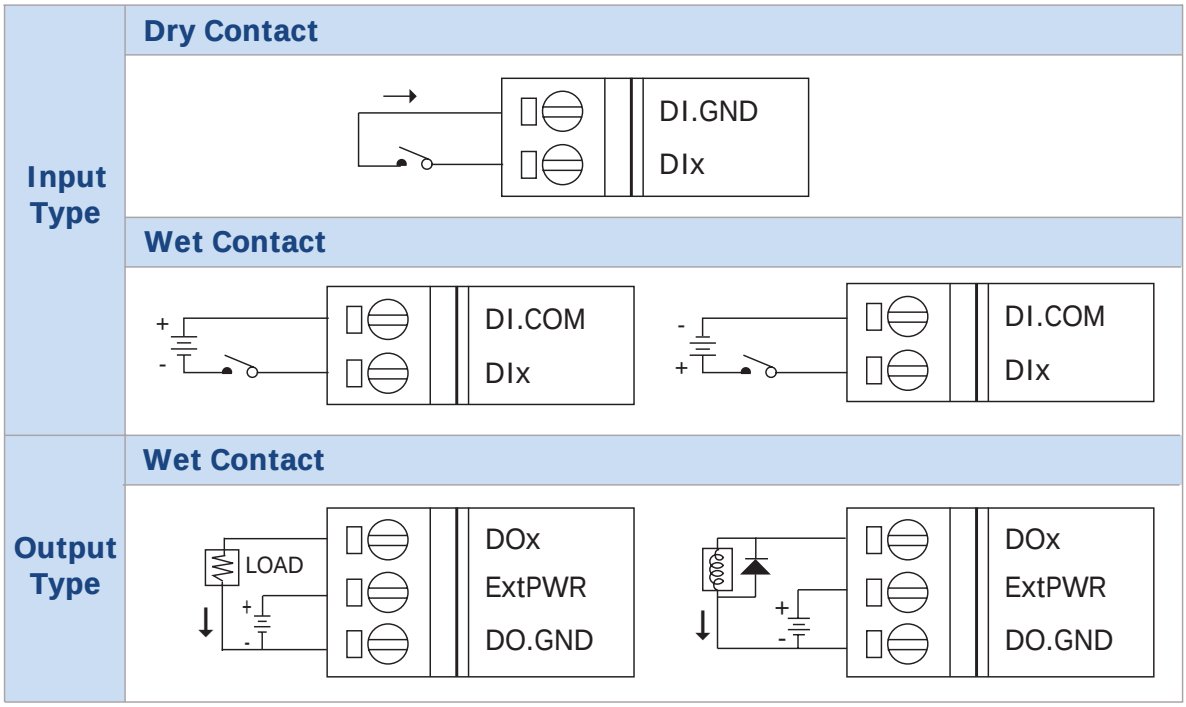
Ordering Information

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

Internal I/O Structure



Wire Connection



Power Relay Output

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

i-7060
i-7060D

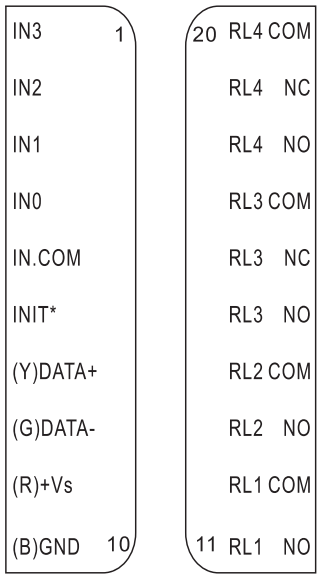
Description

- Traditional Relay, limitted life time is
  - Machnical: 20x10^6 OPS
  - Electrical: 100x10^3 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)

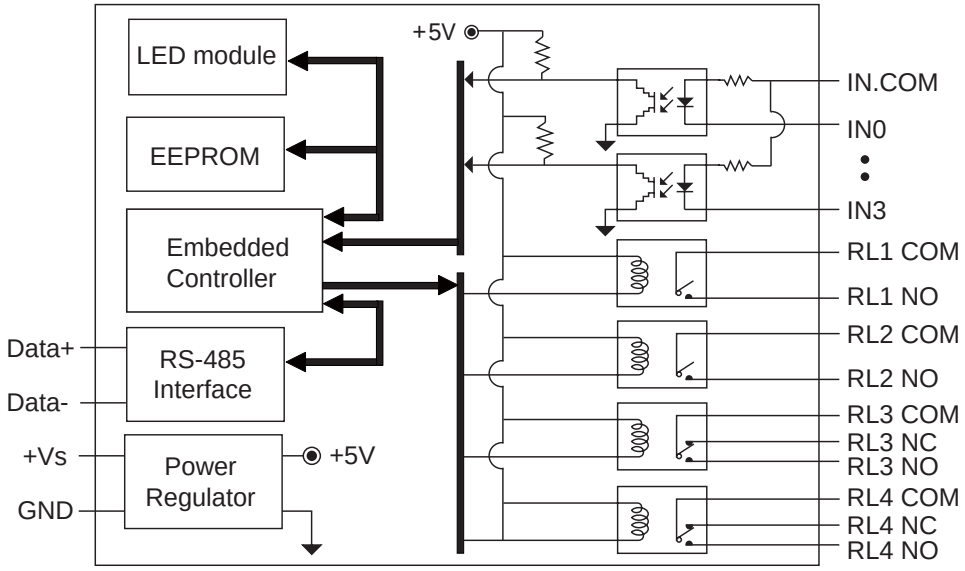
Pin Assignment



Ordering Information

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

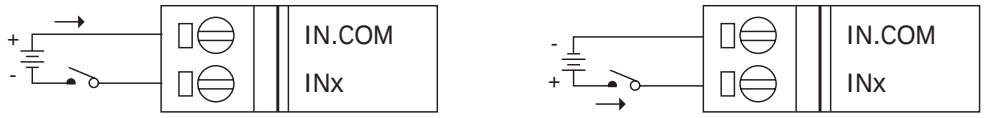
Internal I/O Structure



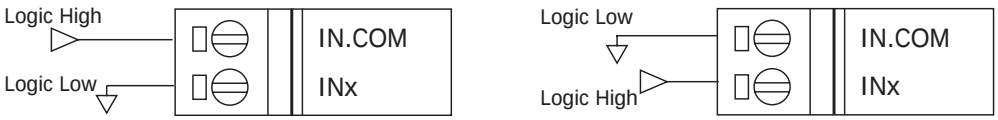
Wire Connection

Input Type

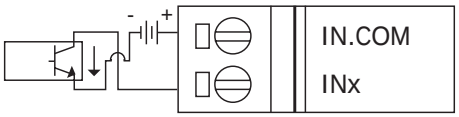
Dry Contact



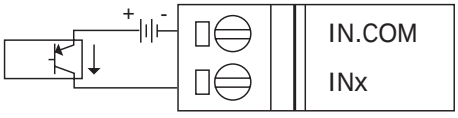
TTL/CMOS



NPN Output



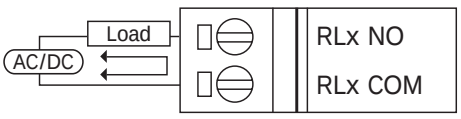
PNP Output



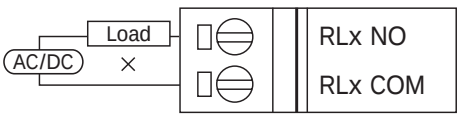
Output Type

Relay Output in RL1 and RL2

Relay On

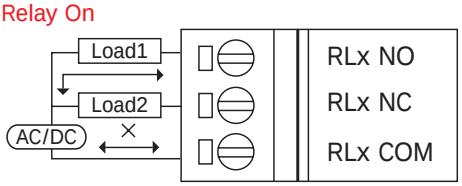


Relay Off

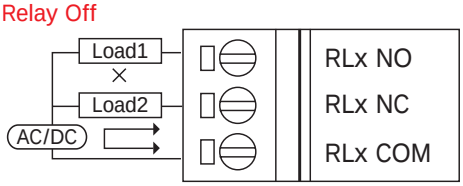


Relay Output in RL3 and RL4

Relay On



Relay Off



Power Relay Output

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

RoHS

Description

- Traditional Relay, limitted life time is
  - Machnical: 20x10^6 OPS
  - Electrical: 100x10^3 Full Load
- "D" means with LED Display.

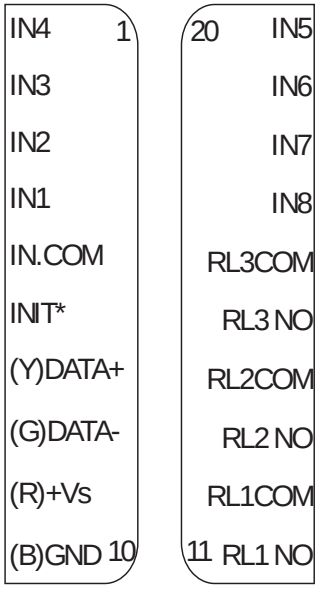
i-7063
i-7063D

CE FC

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 X 10^6 OPS Electrical : 100 X 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)

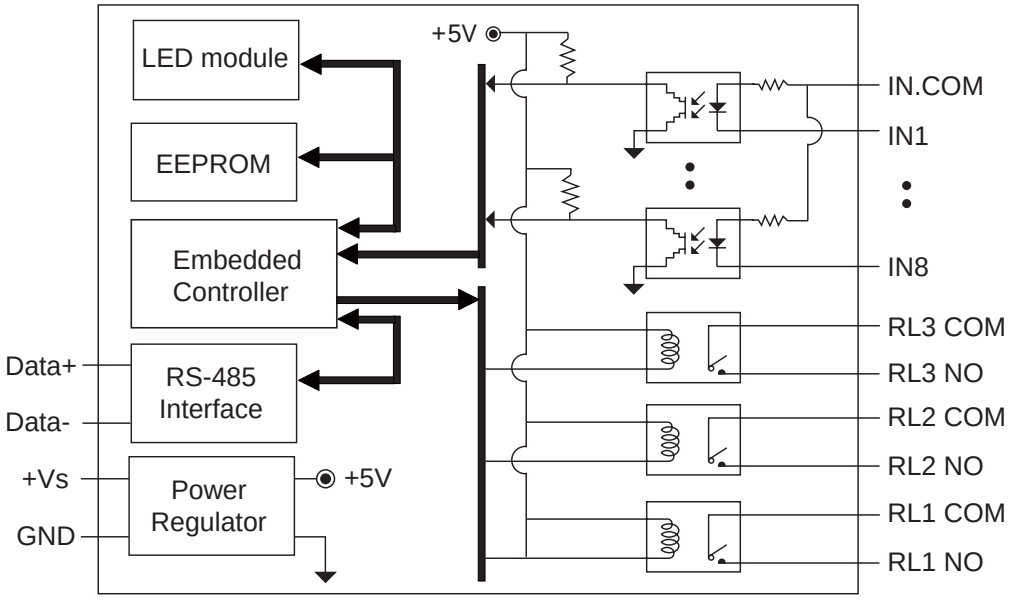
Pin Assignment



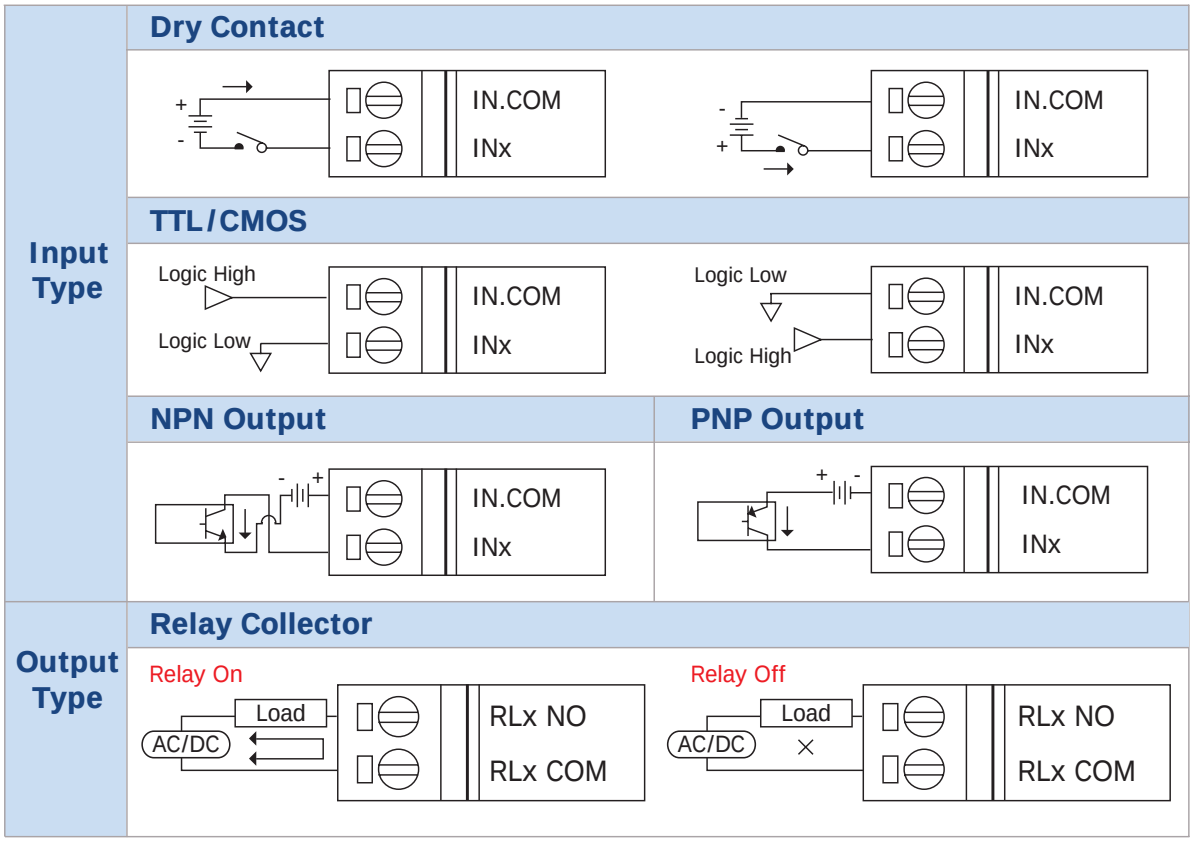
Ordering Information

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



Power Relay Output

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

i-7065
i-7065D

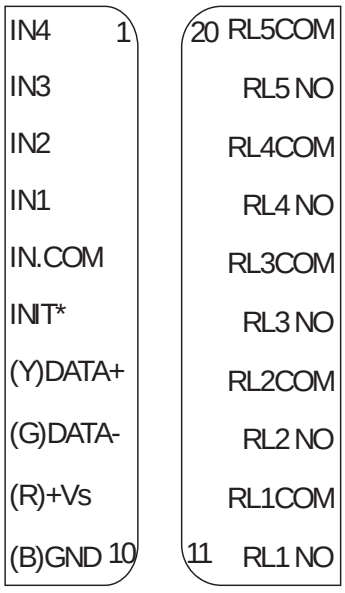
Description

- Traditional Relay, limitted life time is
  - Machnical: 20x10^6 OPS
  - Electrical: 100x10^3 Full Load
- "D" means with LED Display.

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 X 10^6 OPS Electrical : 100 X 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)

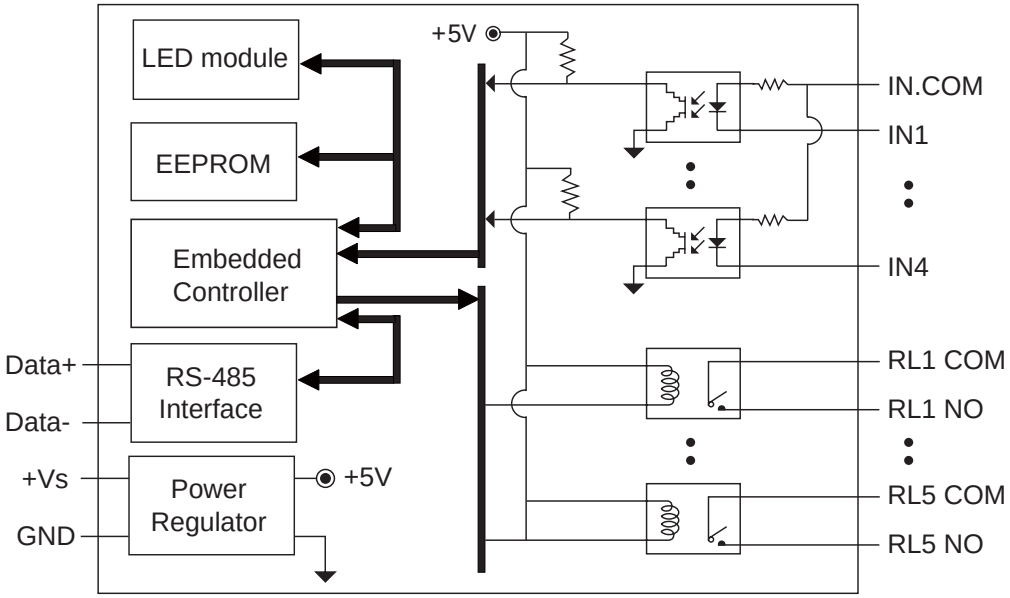
Pin Assignment



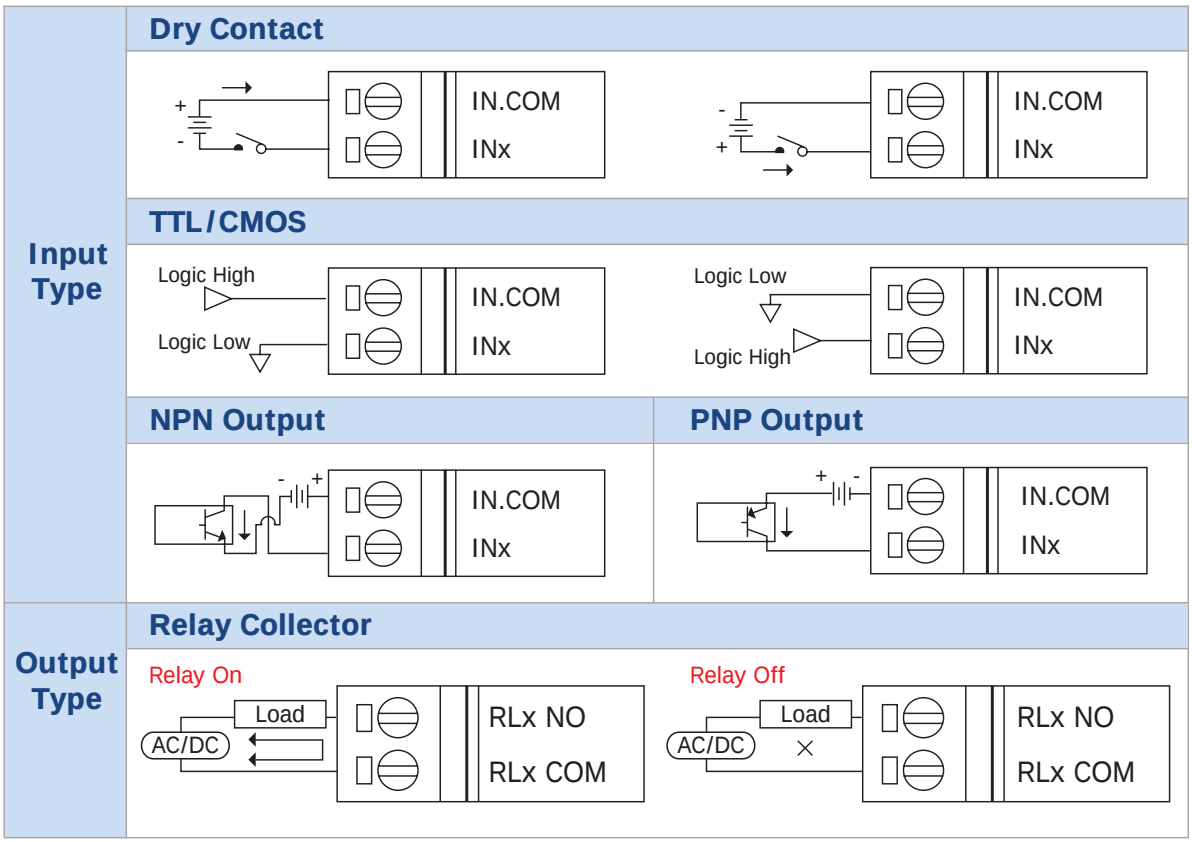
Ordering Information

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



Power Relay Output

7-channel Relay Output Module

i-7067
i-7067D

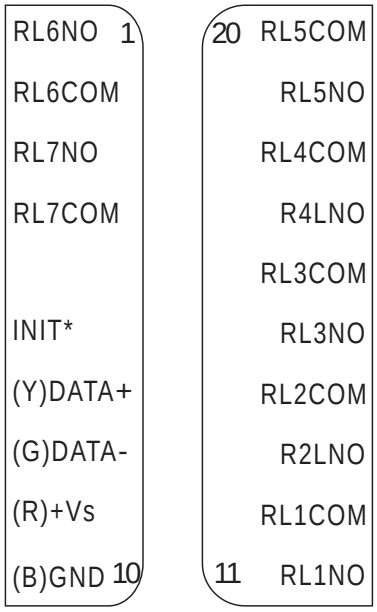
Description

- Traditional Relay, limitted life time is
  - Machnical: 20x10^6 OPS
  - Electrical: 100x10^3 Full Load
- "D" means with LED Display.

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 X 10^6 OPS Electrical : 100 X 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)	

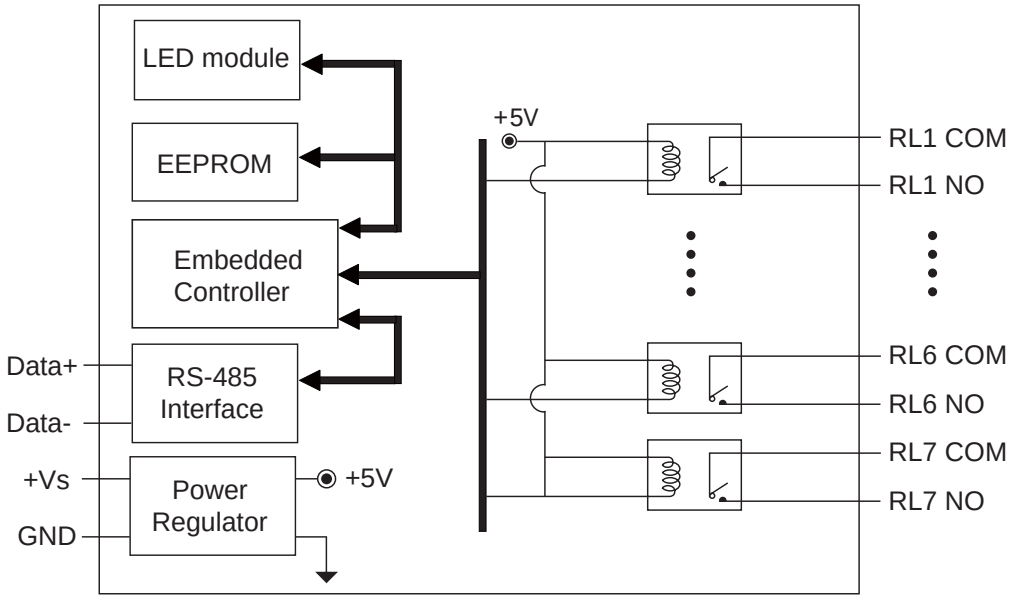
Pin Assignment



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

Output Type	Relay Collector
	Relay On: Load, AC/DC, RLx NO, RLx COM Relay Off: Load, AC/DC, RLx NO, RLx COM

Solid State Relay Output

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

i-7063A
i-7063AD

Description

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

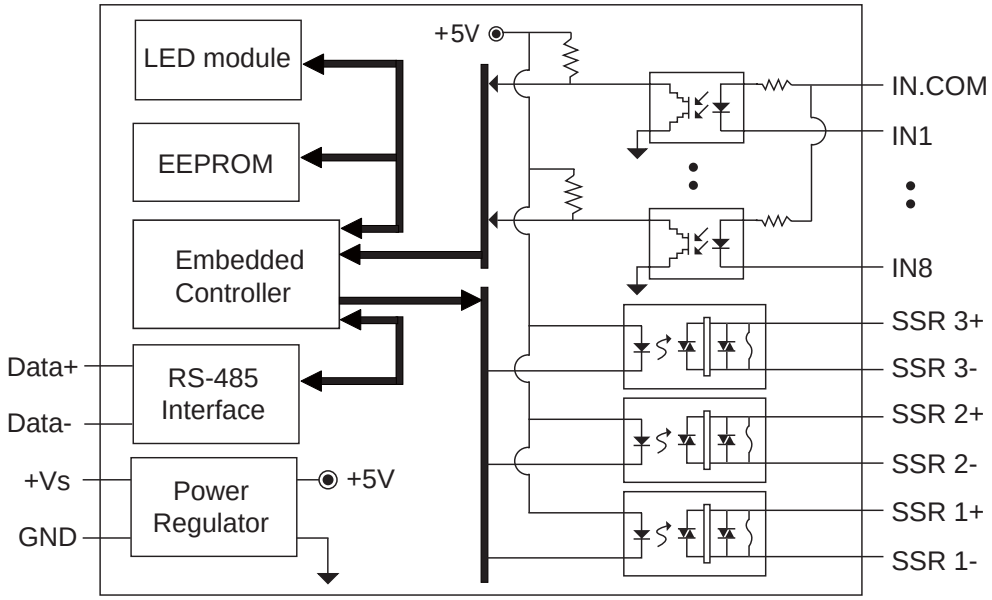
Specifications

■ 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		
On voltage level	+4V to +30V	**Input impedance**	3K Ohms, 0.5W
Off voltage level	+1V Max	**Photo-isolation**	3750Vrms
■ 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** **Life time**	4,000VAC long life, maintence free
Max. off-state leakage current	0.75mA (at 100Vrms 60Hz) 1.50mA (at 200Vrms 60Hz)	**Max. on-state voltage drop**	1.2 Vms
Operating time	1ms (typical)	**Release time**	1ms+1/2rms (typical)
1 cycle surge current	50A (60Hz)	**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)

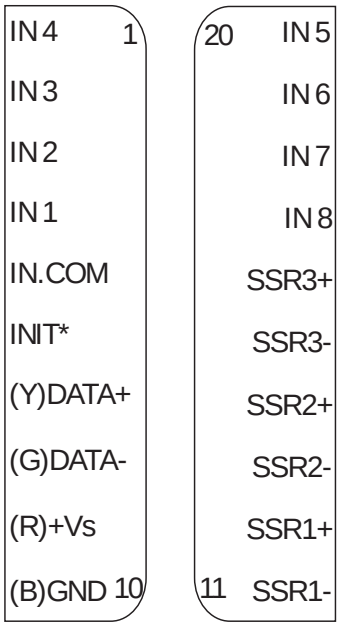
Ordering Information

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)

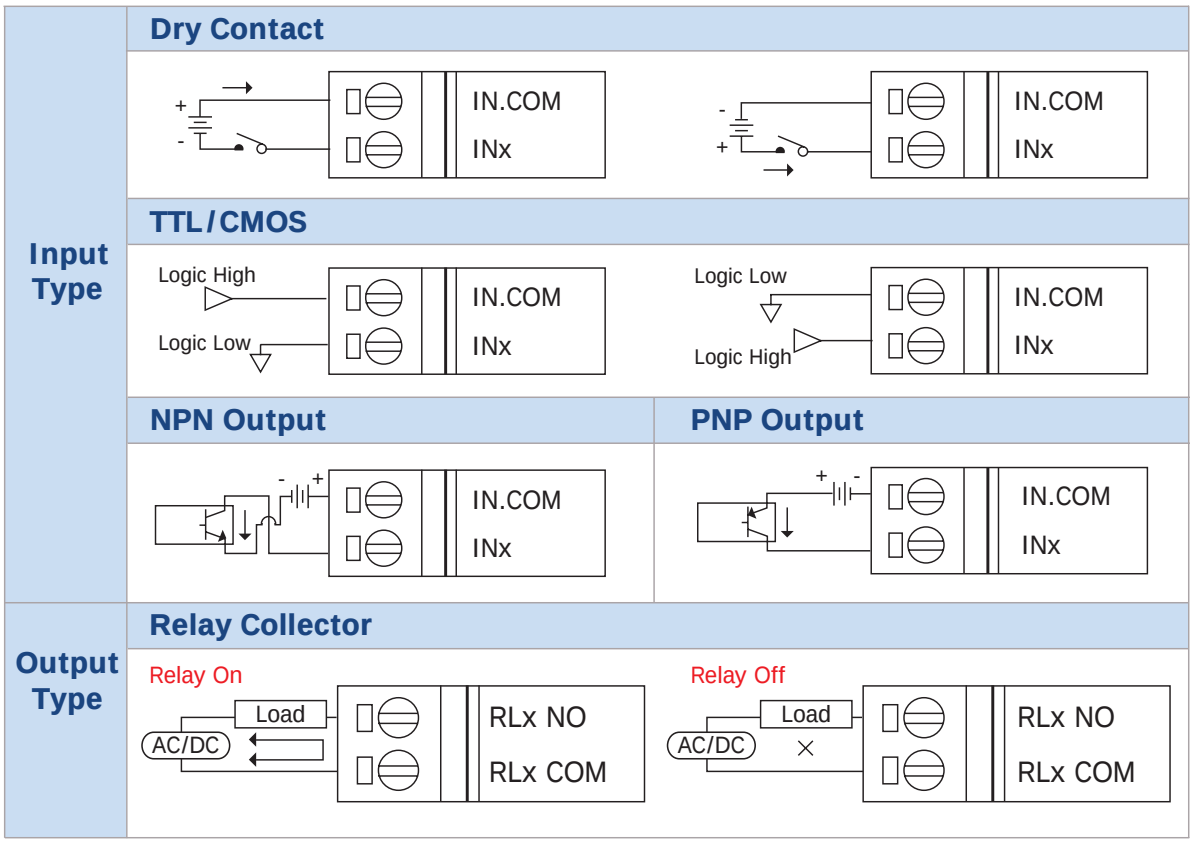
Internal I/O Structure



Pin Assignment



Wire Connection



Solid State Relay Output

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

RoHS

i-7063B
i-7063BD

Description

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

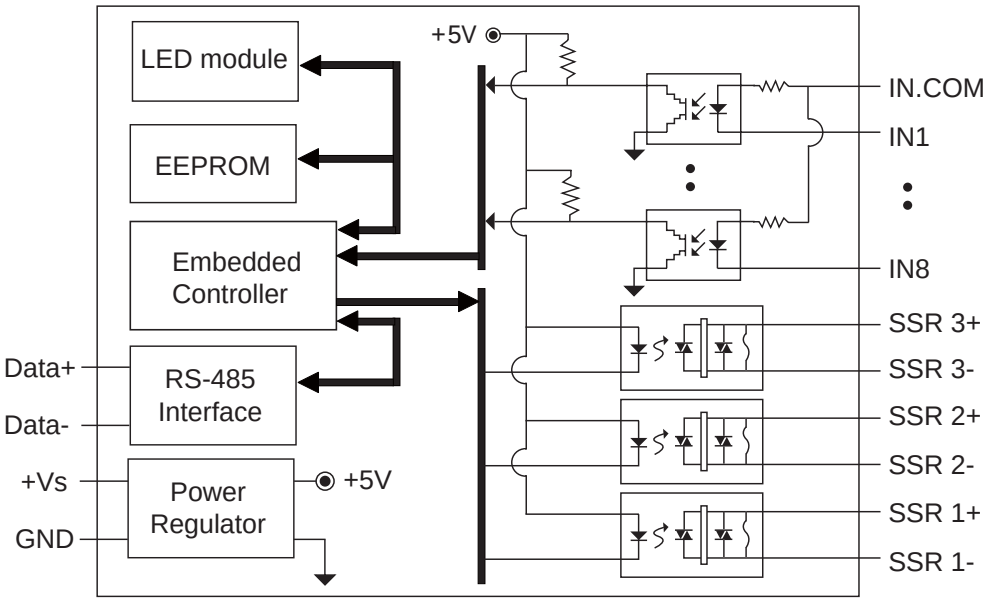
Specifications

■ 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		
On voltage level	+4V to +30V	**Input impedance**	3K Ohms, 0.5W
Off voltage level	+1V Max	**Photo-isolation**	3750Vrms
■ 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** **Life time**	4,000VAC long life, maintence free
Max. off-state leakage current	0.1mA (at 30VDC)	**Max. on-state voltage drop**	1.2 VDC
Operating time	1ms (typical)	**Release time**	1ms (typical)
1 cycle surge current	3A (10ms)	**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)

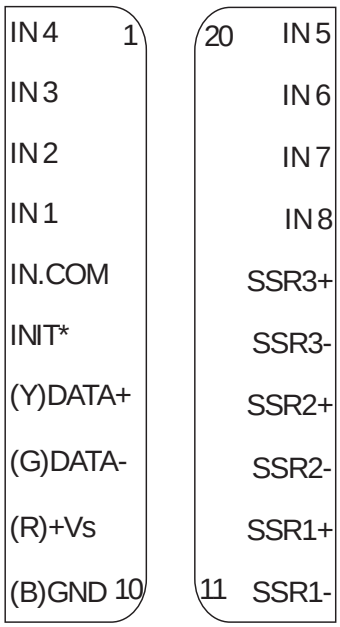
Ordering Information

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



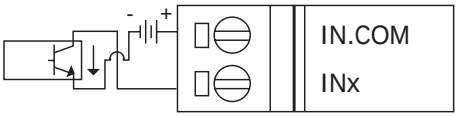
Wire Connection

Input Type

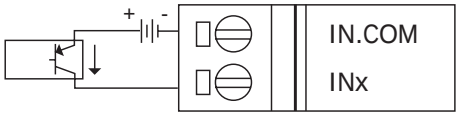
Dry Contact

TTL/CMOS

NPN Output

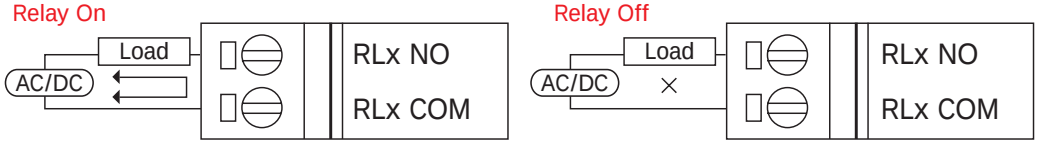


PNP Output



Output Type

Relay Collector



Solid State Relay Output

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

i-7065A
i-7065AD

Description

- Long life time Relay, maintence free.
- Includes free EZ Data Logger software
- "D" means with LED Display.

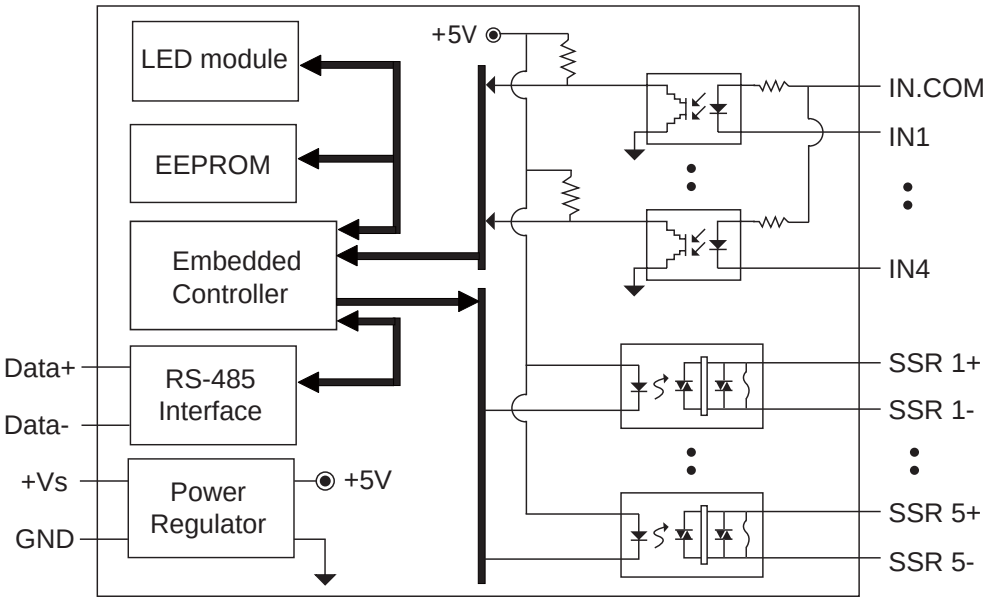
Specifications

■ 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		
On voltage level	+4V to +30V	**Input impedance**	3K Ohms, 0.5W
Off voltage level	+1V Max	**Photo-isolation**	3750Vrms
■ 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** **Life time**	4,000VAC long life, maintence free
Max. off-state leakage current	0.75mA (at 100Vrms 60Hz) 1.50mA (at 200Vrms 60Hz)	**Max. on-state voltage drop**	1.2 Vms
Operating time	1ms (typical)	**Release time**	1ms+1/2rms (typical)
1 cycle surge current	50A (60Hz)	**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)

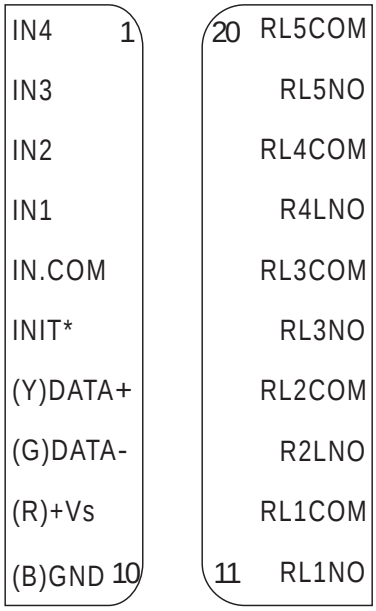
Ordering Information

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



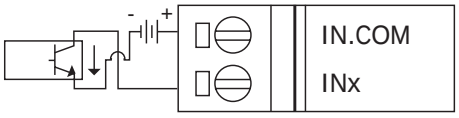
Wire Connection

Input Type

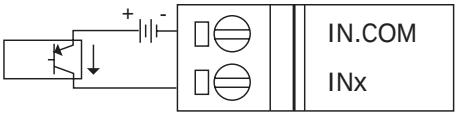
Dry Contact

TTL/CMOS

NPN Output

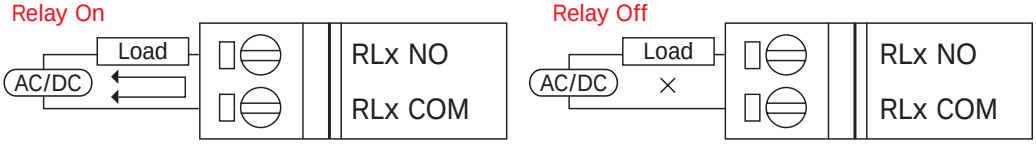


PNP Output



Output Type

Relay Collector



Solid State Relay Output

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

i-7065B
i-7065BD

Description

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

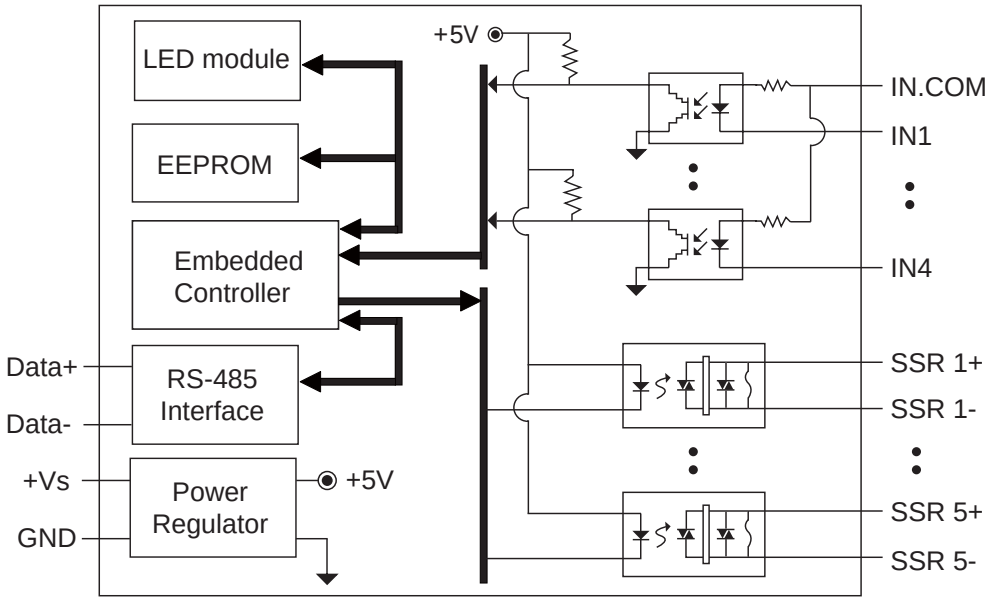
Specifications

■ 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		
On voltage level	+4V to +30V	**Input impedance**	3K Ohms, 0.5W
Off voltage level	+1V Max	**Photo-isolation**	3750Vrms
■ 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** **Life time**	4,000VAC long life, maintence free
Max. off-state leakage current	0.1mA (at 30VDC)	**Max. on-state voltage drop**	1.2 VDC
Operating time	1ms (typical)	**Release time**	1ms (typical)
1 cycle surge current	3A (10ms)	**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)

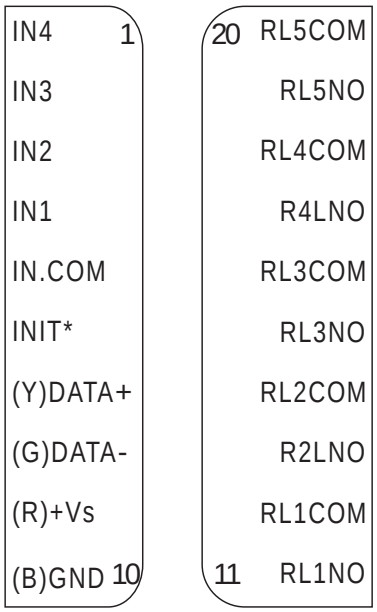
Ordering Information

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

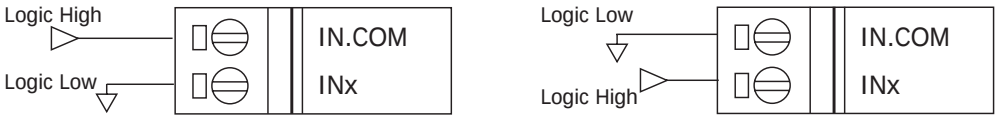


Wire Connection

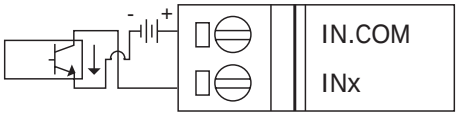
Input Type

Dry Contact

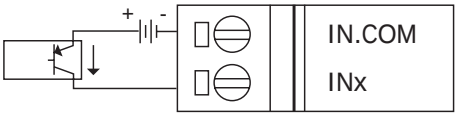
TTL/CMOS



NPN Output

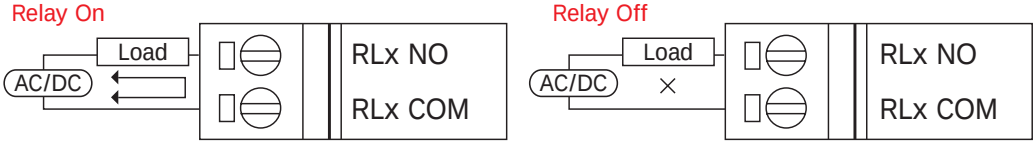


PNP Output



Output Type

Relay Collector



Photomos Relay Output

7-channel PhotoMOS Relay Output Module

i-7066
i-7066D

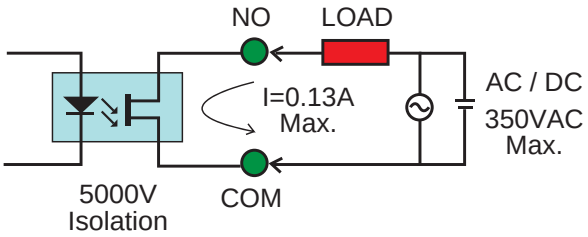
Description

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

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	Power	
1 LED as Power/ Communication Indicator 7 LEDs as PhotoMOS Relay Output indicators (for i-7066D)	**Power consumption**	0.5W (max.) (i-7066) / 0.8W (max.) (i-7066D)

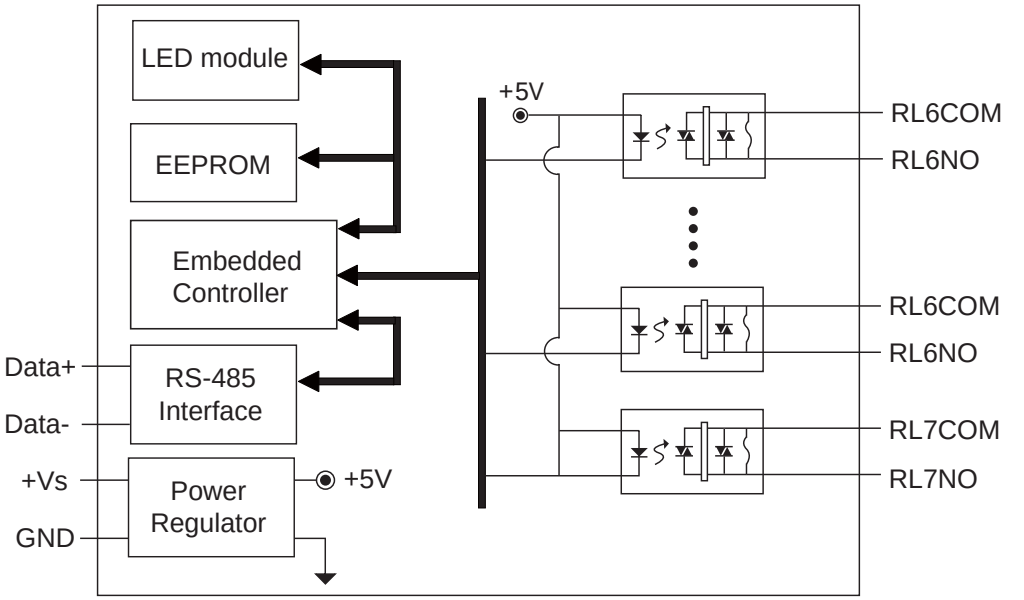


PhotoMos Relay

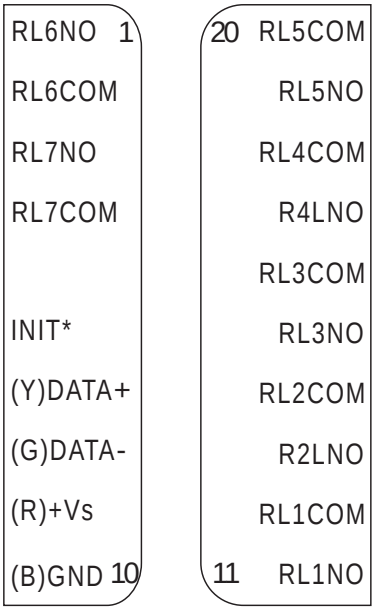
Ordering Information

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

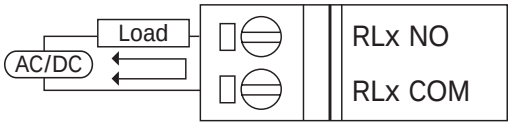
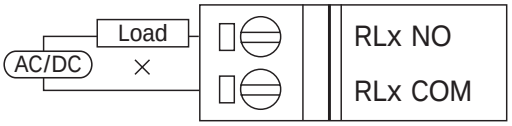
Internal I/O Structure



Pin Assignment



Wire Connection

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

Counter/Frequency Input Module

Description

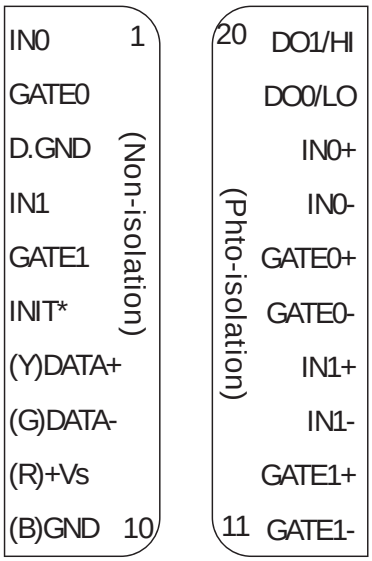
- Input signal range can be 1Hz to 100KHz
- "D" means with LED Display.

i-7080
i-7080D

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.) (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)	

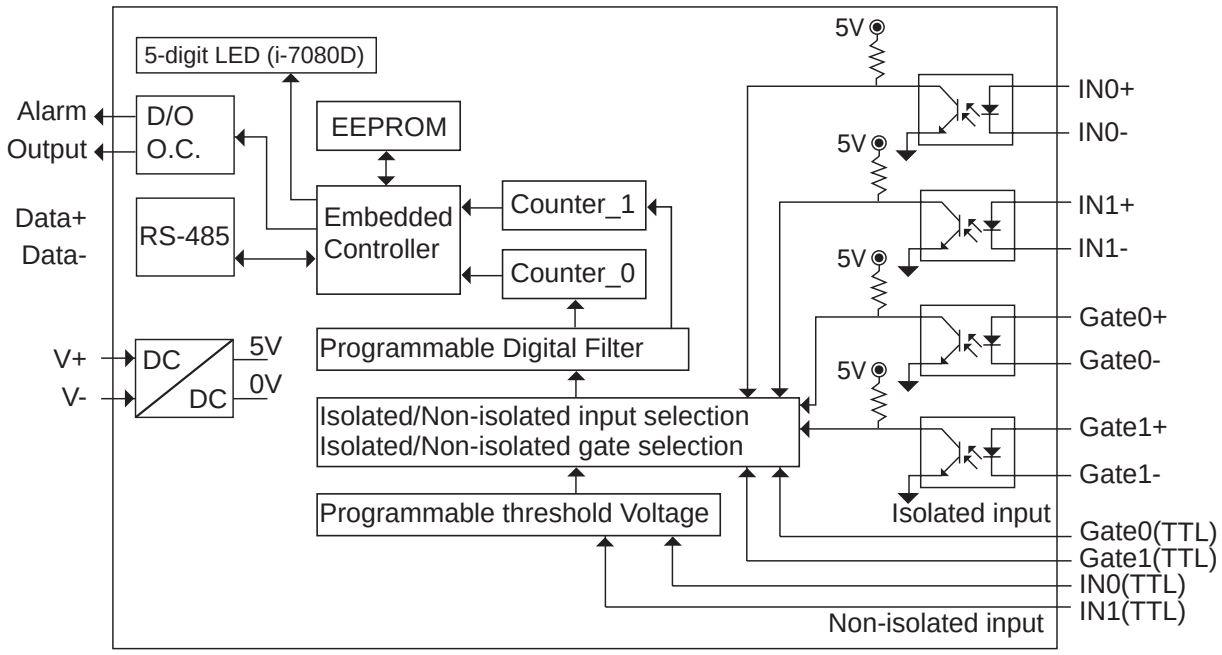
Pin Assignment



Ordering Information

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

Internal I/O Structure

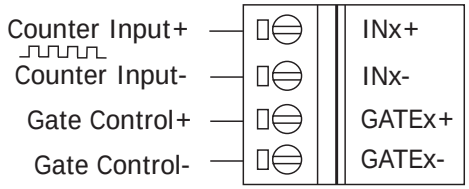


Wire Connection

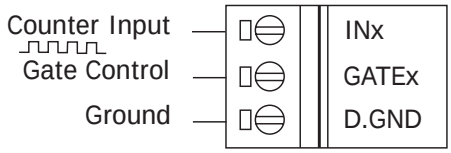
Input Type

Counter Type

Isolation

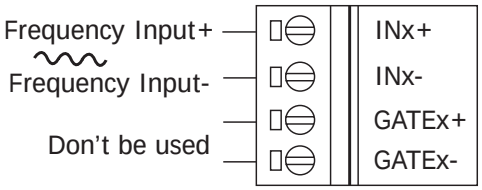


Non-isolation

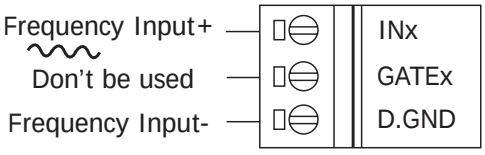


Frequency Type

Isolation

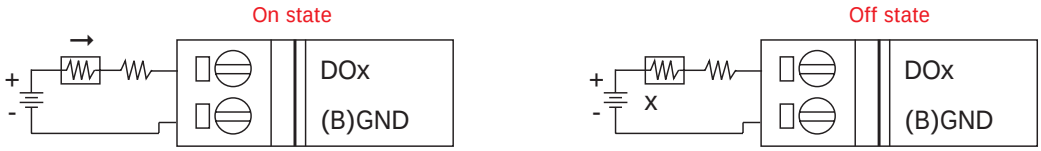


Non-isolation

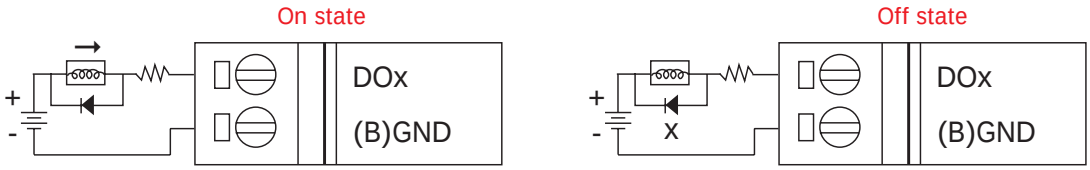


Output Type

Resistance Load



Inductance Load



Counter/Frequency

Counter/Frequency input with
Battery back up module


Description

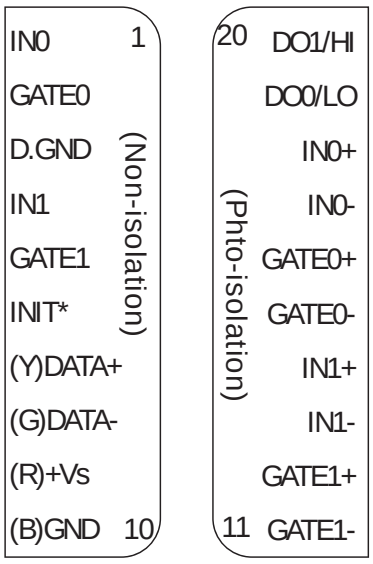
- Input signal range can be 1Hz to 100KHz
- Built-in Virtual Battery Back Up for Counter Value
- "G" means gray color.

i-7080B
i-7080BD

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.) (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)	

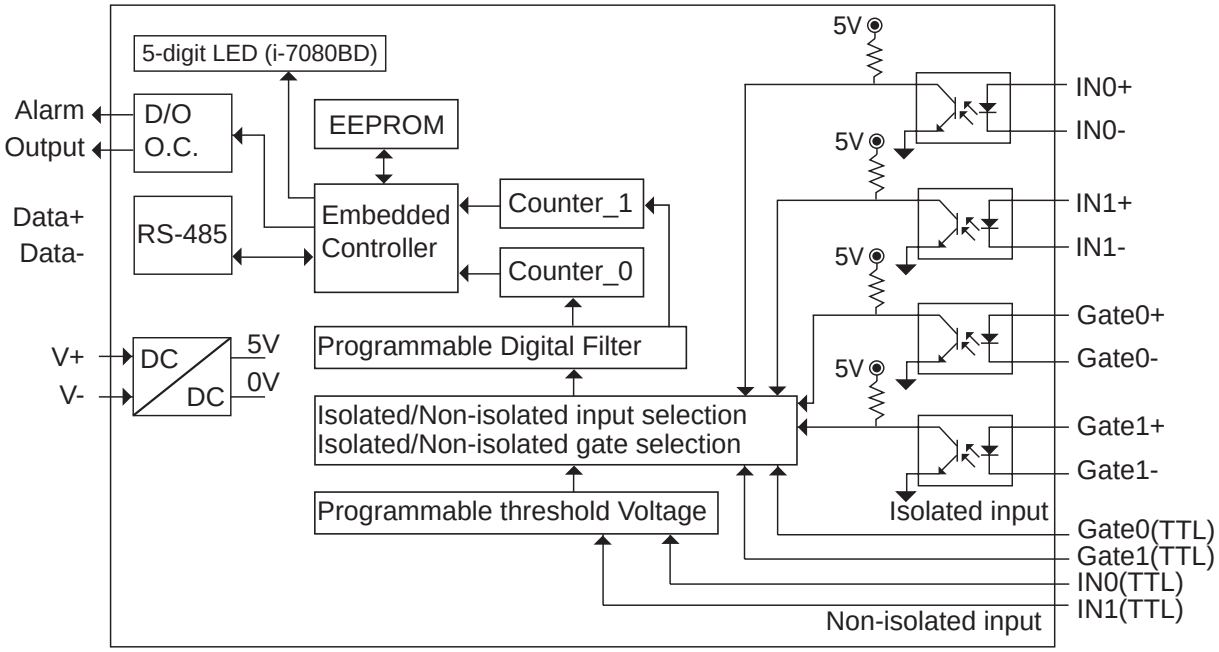
Pin Assignment



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

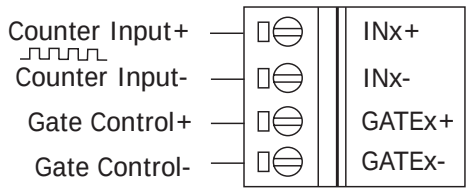


Wire Connection

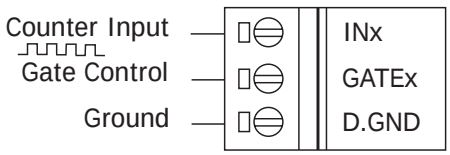
Input Type

Counter Type

Isolation

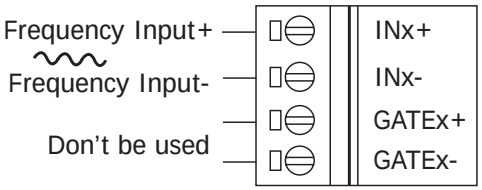


Non-isolation

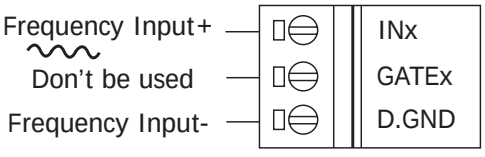


Frequency Type

Isolation



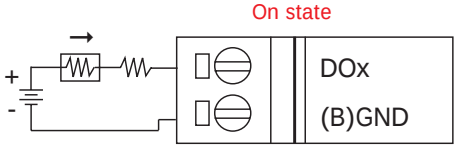
Non-isolation



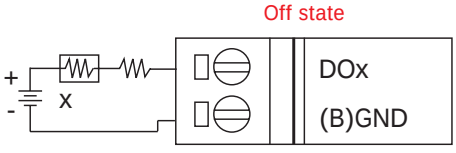
Output Type

Resistance Load

On state

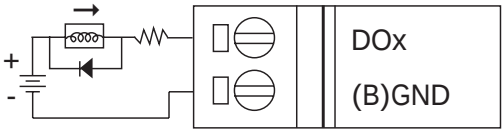


Off state

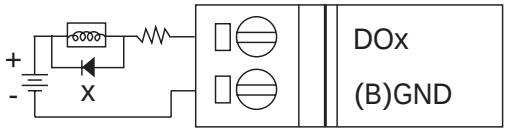


Inductance Load

On state



Off state



Counter/Frequency

3-axis, 32 bits encoder counter.

i-7083
i-7083D

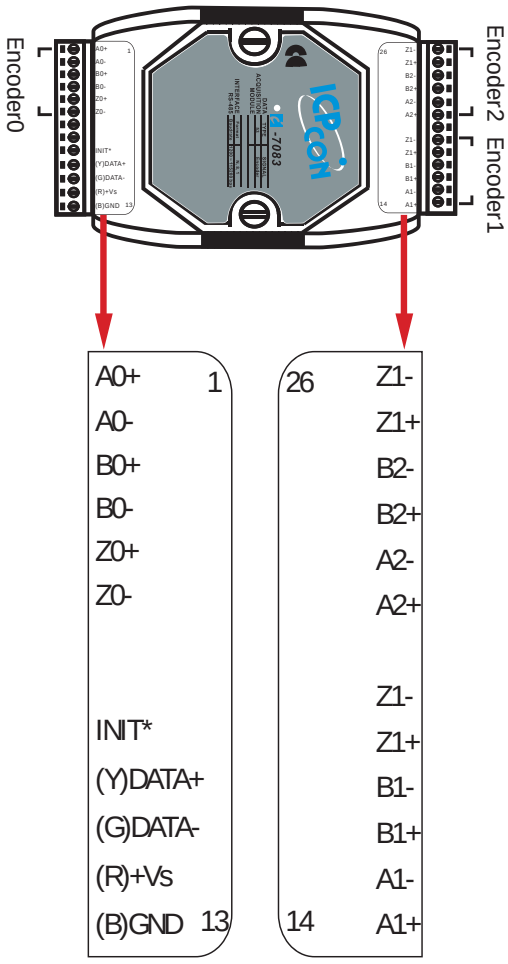
Description

- Input signal range can be up to 1MHz
- "D" means with LED Display.

Specifications

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)		

Pin Assignment



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

RoHS

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

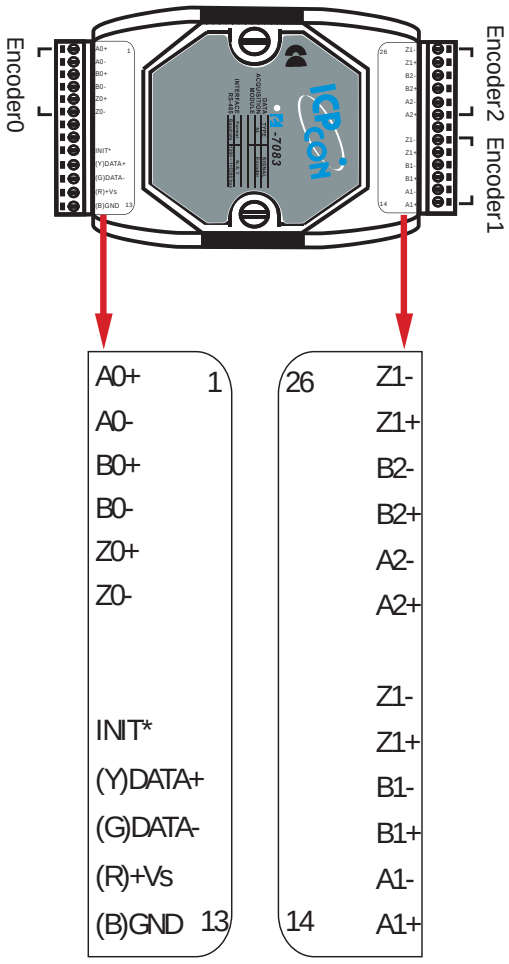
i-7083B
i-7083BD

CE FC

Specifications

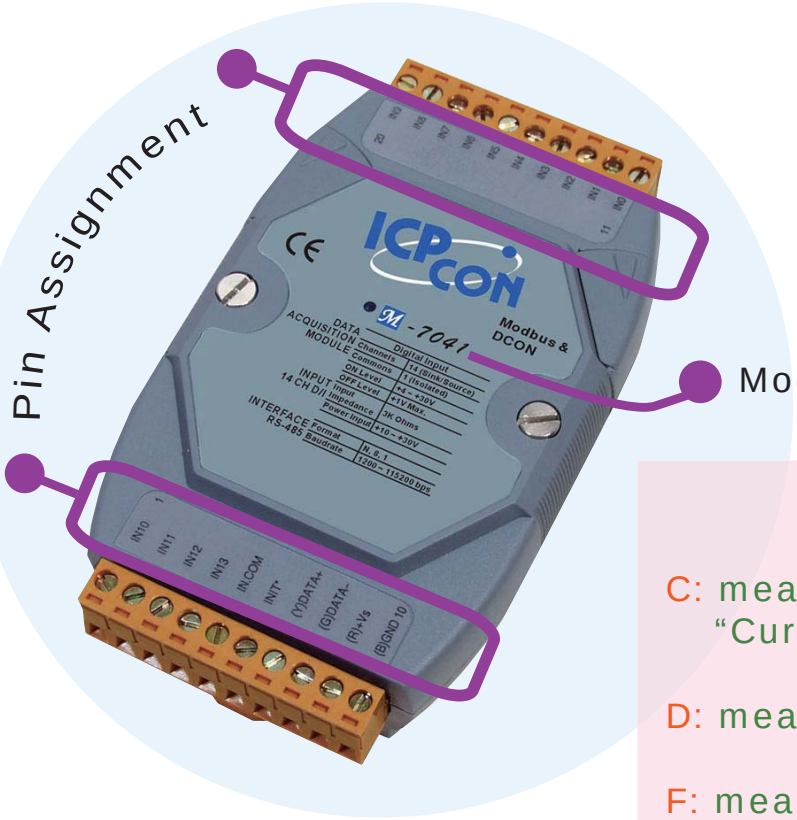
Counter Input		
Input channels	3-axis	
Input type	Isolated	
Encoder mode	Quadrant counting mode, CW/CCW counting mode, Pulse/Dir counting mode	
Isolation voltage	Input level 5V	Logic High : 3.5V~5V Logic Low : 0V~2V
	Input 12V with external resistor 1K ohm Logic High: 5V~12V	
	Input 24V with external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

Pin Assignment



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)



M - 70XX □-□

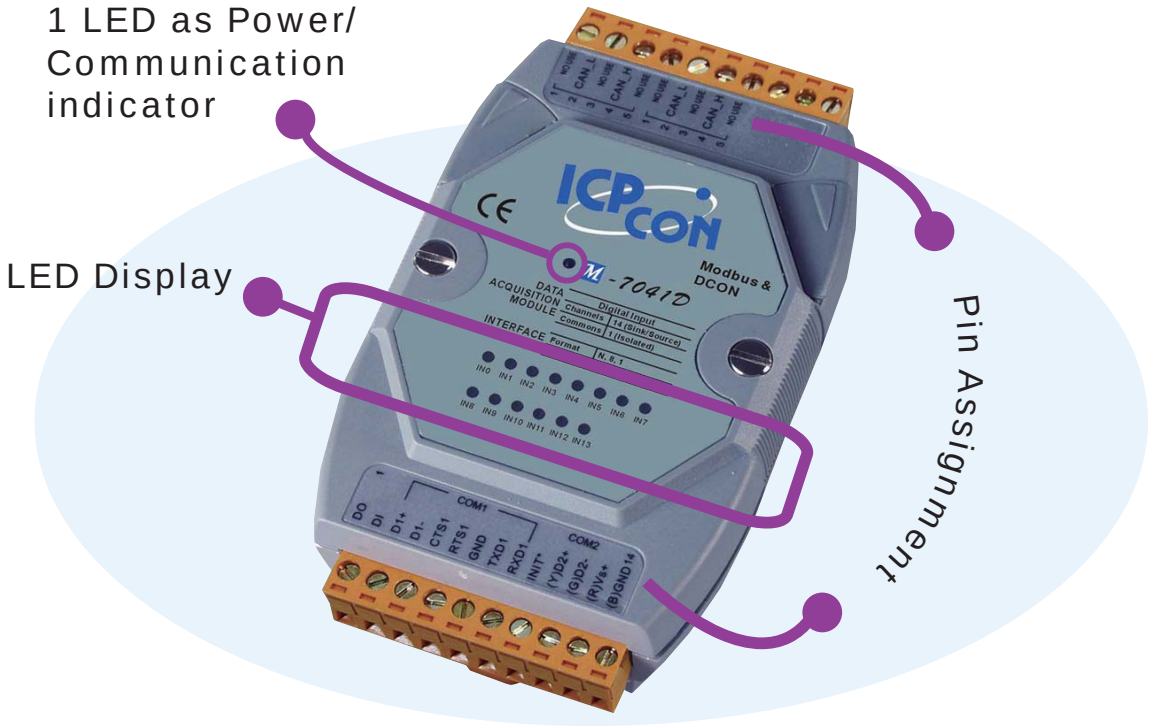
C: means the modules is for +/-20mA "Current" inputs.

D: means LED Display

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

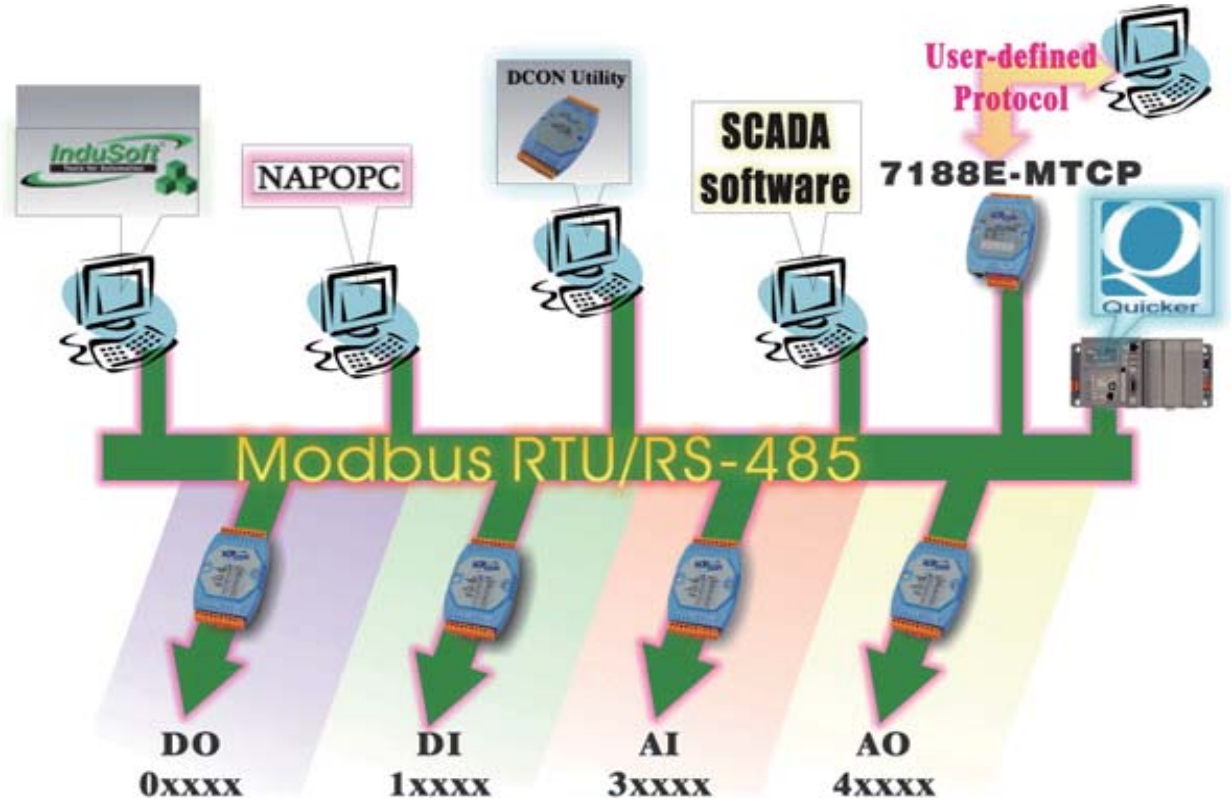
G: means gray color

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



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)

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 avaliable

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

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
Counter	Channels	4	-
	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

8-channel Analog Input Module with
High Over Voltage Protection

M-7017R

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

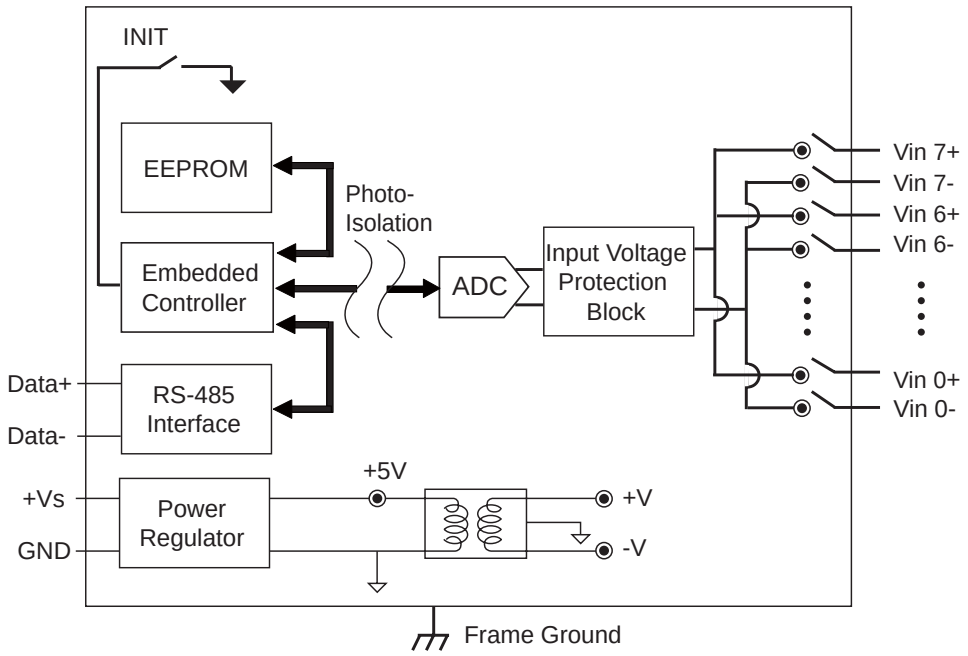
■ Analog Input			
Input channels	8 Differential	**Overvoltage protection**	240Vrms
Input type	+/-500mV, +/-1V, +/-5V, +/-10V +/-20mA	**Resolution**	Normal Mode : 16-bit, Fast Mode : 12-bit
Sampling rate	Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total)	**Accuracy**	Normal Mode :+/- 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

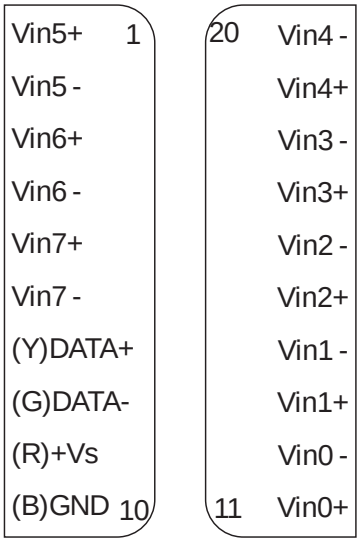
Ordering Information

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

Internal I/O Structure

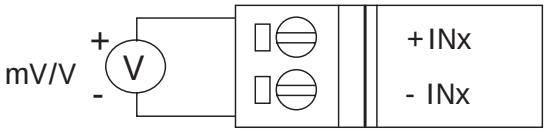


Pin Assignment

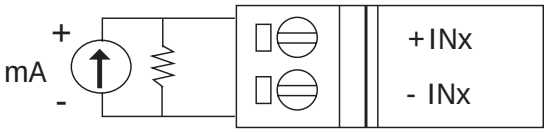


Wire Connection

Voltage Input



Current Input



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

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**	125Ohms
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

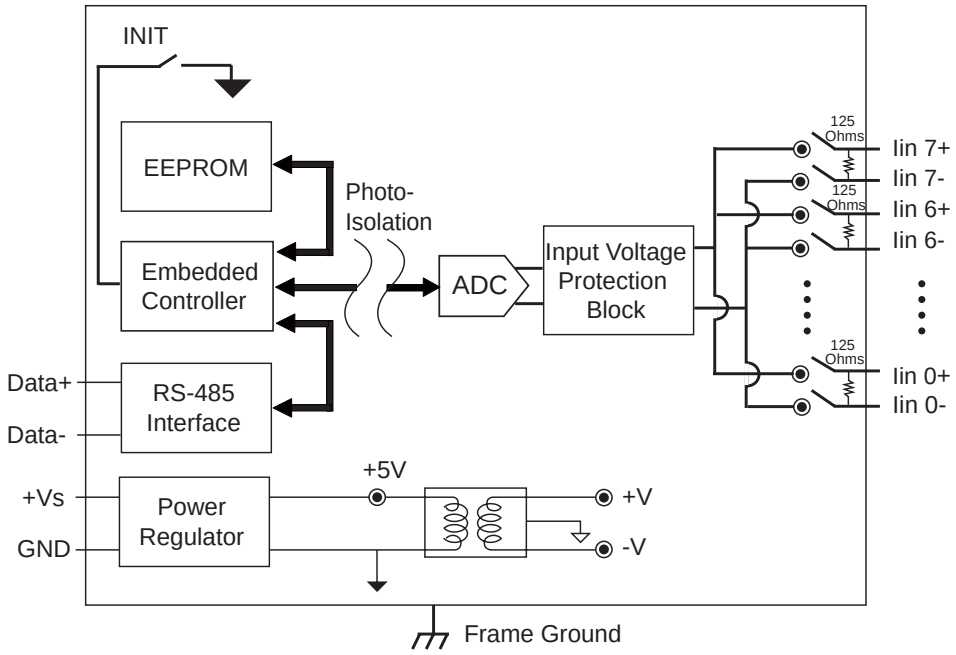
■ LED Display	■ Power	
1 LED as Power/ Communication Indicator	**Input**	+10 to +30 Vdc
	Power consumption	1.3W

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

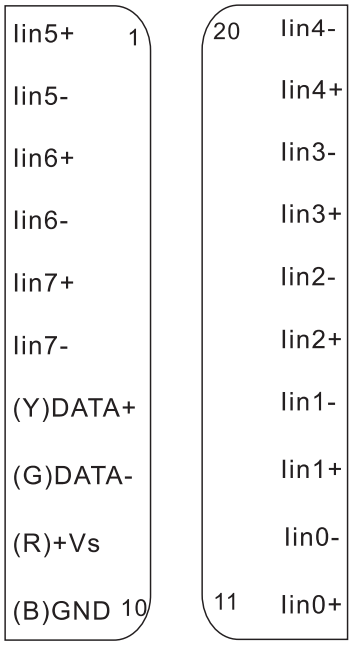
Ordering Information

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

Internal I/O Structure

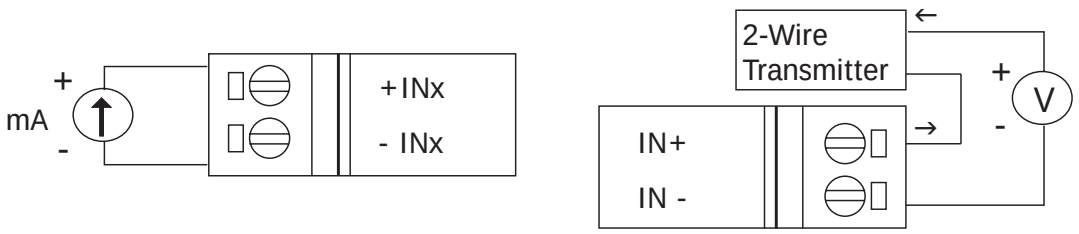


Pin Assignment



Wire Connection

Current Input



8-channel Analog Input Module with
High Over Voltage Protection

RoHS

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-7018R

CE FC

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			

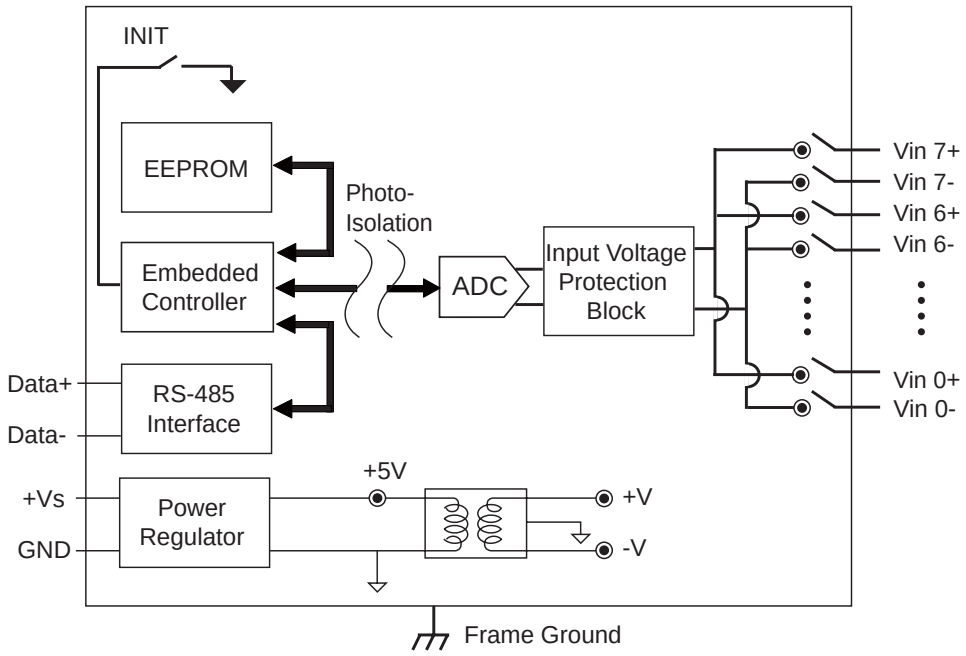
■ LED Display	■ Power	
1 LED as Power/ Communication Indicator	**Input**	+10 to +30 Vdc
	Power consumption	1.0W

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

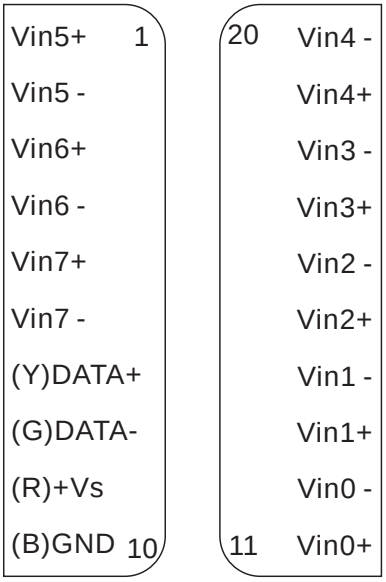
Ordering Information

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

Internal I/O Structure



Pin Assignment

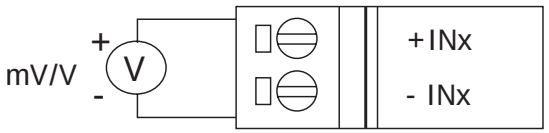


Thermocouple Type

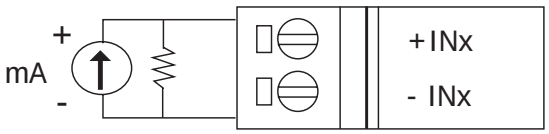
Code	Type	Range°C
0E	J	-210 ~ +760
0F	K	-270 ~ +1372
10	T	-270 ~ +400
11	E	-270 ~ +1000
12	R	0 ~ +1768
13	S	0 ~ +1768
14	B	0 ~ +1820
15	N	-270 ~ 1300
16	C	0 ~ 2320
17	L	-200 ~ +800
18	M	-200 ~ +100
19	L2(DIN43710)	-200 ~ +900

Wire Connection

Voltage Input

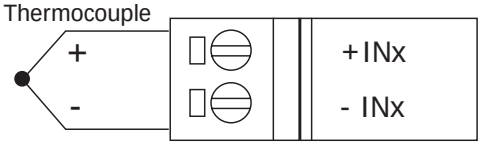


Current Input



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

Thermocouple Input



M-7018Z
DB-1820

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

RoHS

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

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

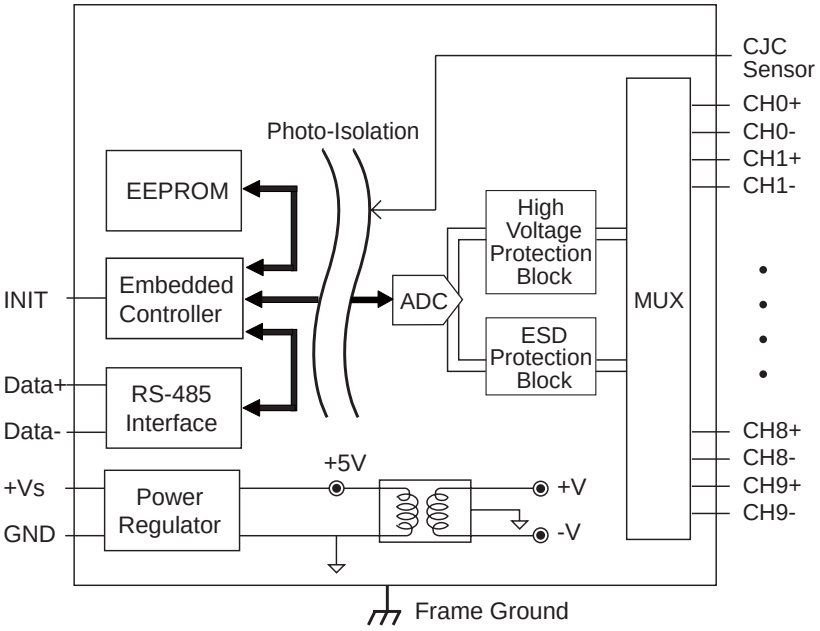
Suggested Accessory

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

CD-2518D

CD-25015

Internal I/O Structure



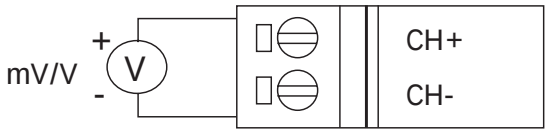
Pin Assignment For M-7018Z

Name	Terminal No.		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.

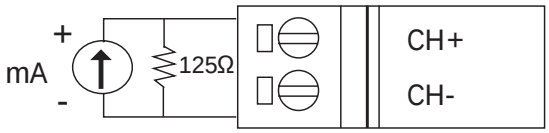
25-Pin Female D-Sub Connector

Wire Connection

Voltage Input

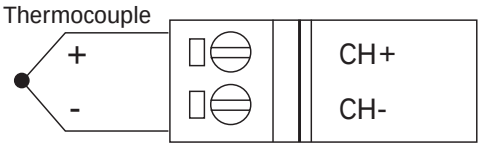


Current Input



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

Thermocouple Input



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

Pin Assignment For DB-1820

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-7019R

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.

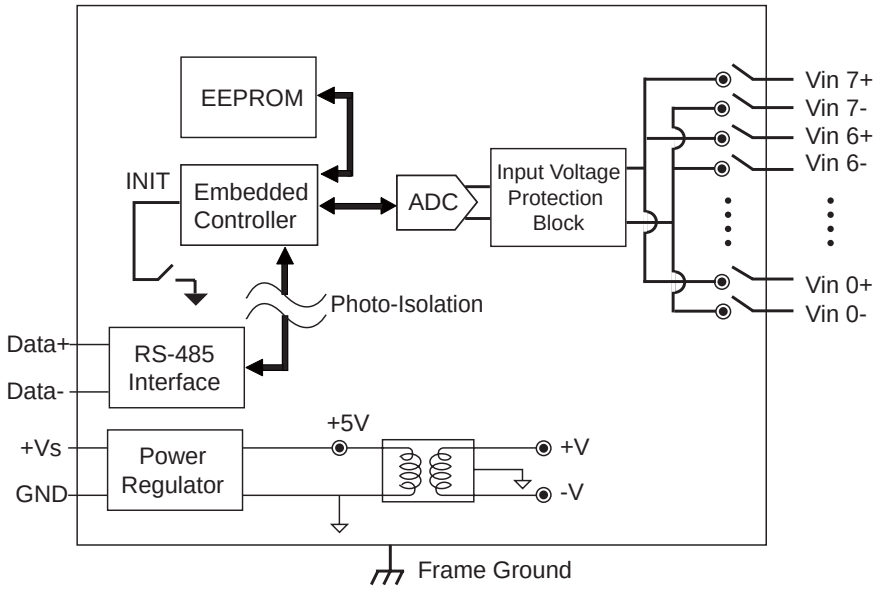
Specifications

■ 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
		Indication LED light	For power and communication
Current range	± 20mA (jumper selectable)	Over voltage protection	240 Vrms
Thermocouple	Type J, K, T, E, R, S, B, N, C, L, M, L2	4KV ESD protection	Yes, Contact for each terminal
Sample rate	8 Samples/Second (Total)	Support Modbus and DCON protocol	
-3dB bandwidth	5.24 Hz	Individual channel configurable	
Resolution	16-bits	Open wire detecttion	
Accuracy	For +/-15mV:+/- 0.3% of FSR Others:+/- 0.15% of FSR	■ Power	
		Power consumption	1.2W

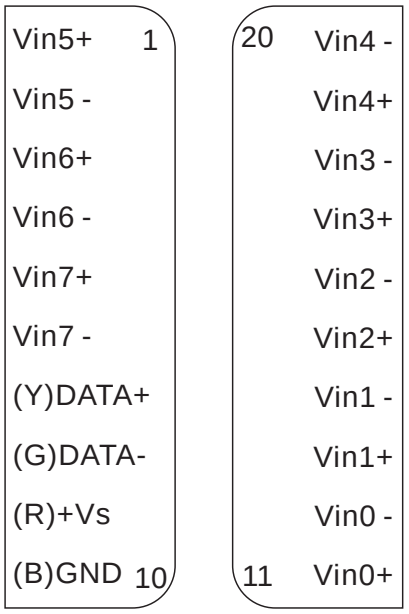
Ordering Information

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

Internal I/O Structure



Pin Assignment

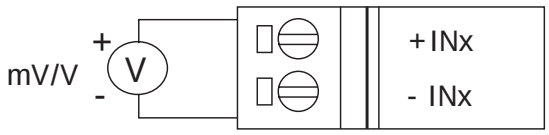


Thermocouple Type

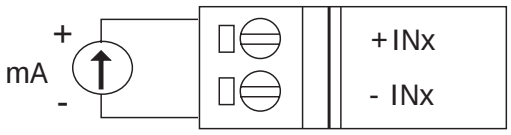
Type Code	Type	Range°C
0E	J	-210 ~ +760
0F	K	-270 ~ +1372
10	T	-270 ~ +400
11	E	-270 ~ +1000
12	R	0 ~ +1768
13	S	0 ~ +1768
14	B	0 ~ +1820
15	N	-270 ~ 1300
16	C	0 ~ 2320
17	L	-200 ~ +800
18	M	-200 ~ +100
19	L2(DIN43710)	-200 ~ +900

Wire Connection

Voltage Input

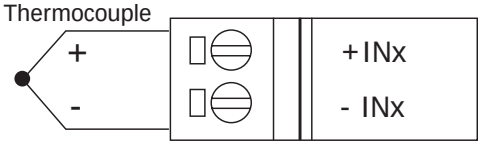


Current Input



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



6-channel RTD Input Module

M-7015

Description

- Measure temperature with RTD sensor
- Support open wire detection
- Individual channel configurable
- Support Modbus and DCON protocols.

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			

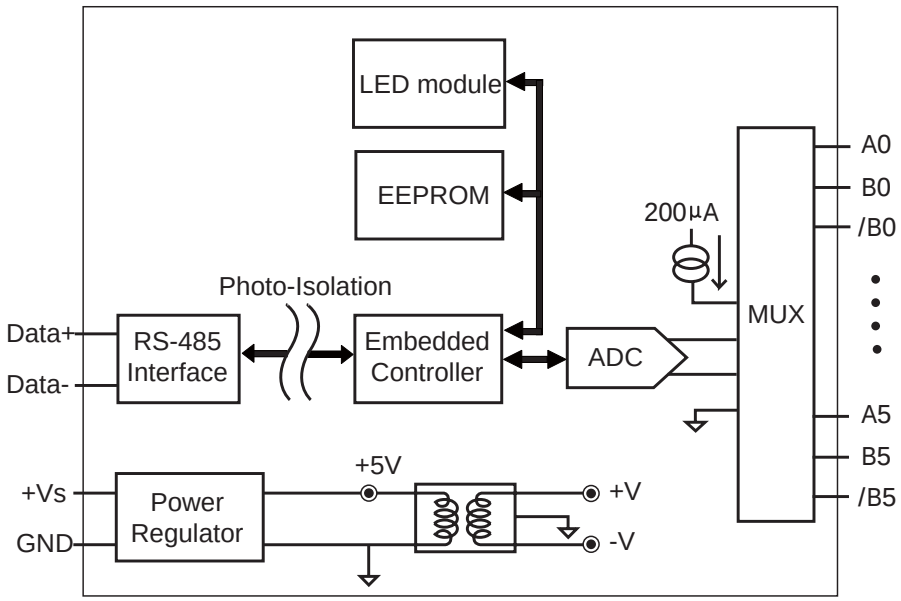
■ Power		■ LED Display
Power consumption	1.1W	1 LED as Power/ Communication indicator

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

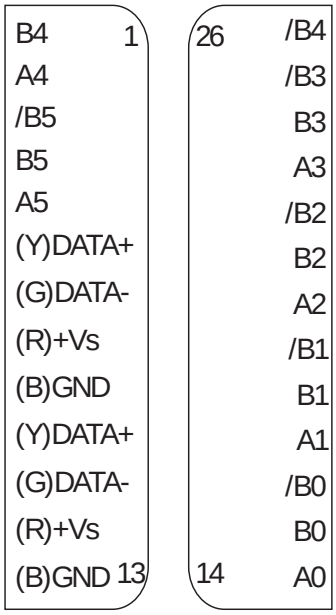
Ordering Information

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

Internal I/O Structure



Pin Assignment

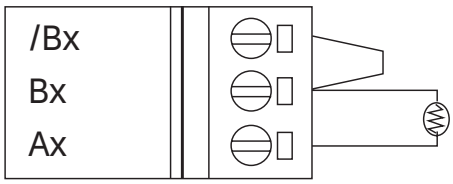


RTD Type

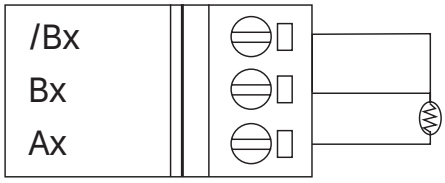
Code	Type	Range °C
20	Platinum 100, α= 0.00385	-100~100
21	Platinum 100, α= 0.00385	0~100
22	Platinum 100, α= 0.00385	0~200
23	Platinum 100, α= 0.00385	0~600
24	Platinum 100, α= 0.003916	-100~100
25	Platinum 100, α= 0.003916	0~100
26	Platinum 100, α= 0.003916	0~200
27	Platinum 100, α= 0.003916	0~600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

Wire Connection

2 Wire RTD



3 Wire RTD



3-channel RTD Input Module

M-7033
M-7033D

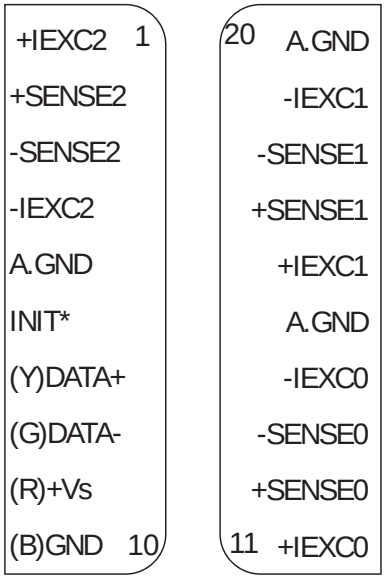
Description

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

Specifications

■ Analog Input	
Input channels	3
Input type	RTD
Wire connection	2/3/4 wire
RTD type	Pt100 α=0.00385, Pt100 α=0.003916, Ni120, Pt1000 α=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 μV/ °C
Zero drift	+/- 0.5 μV/ °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)

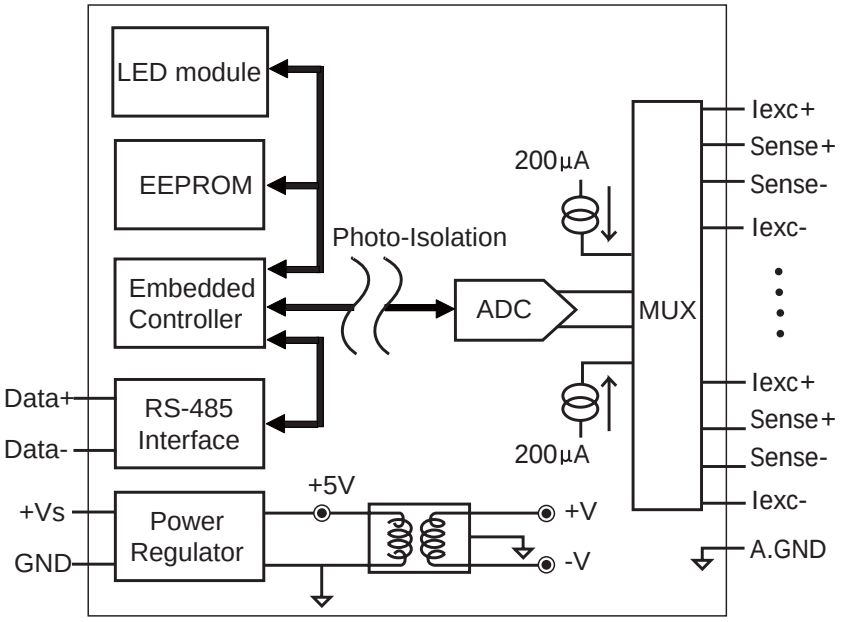
Pin Assignment



Ordering Information

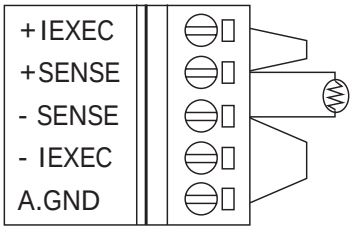
M-7033-G CR	3-channel RTD Input Module (Gray Cover) (RoHS)
M-7033D-G CR	3-channel RTD Input Module with LED display (Gray Cover) (RoHS)

Internal I/O Structure

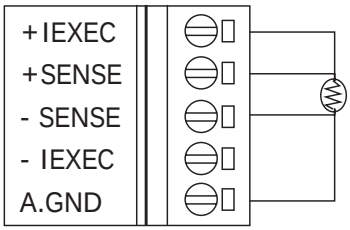


Wire Connection

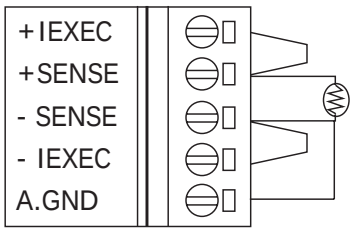
2 Wire RTD

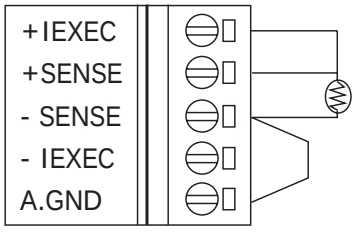


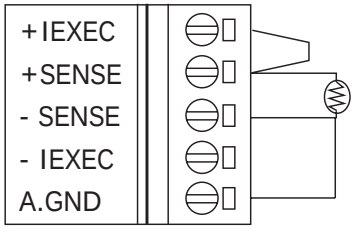
3 Wire RTD



4 Wire RTD







Thermocouple Type

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

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

Description

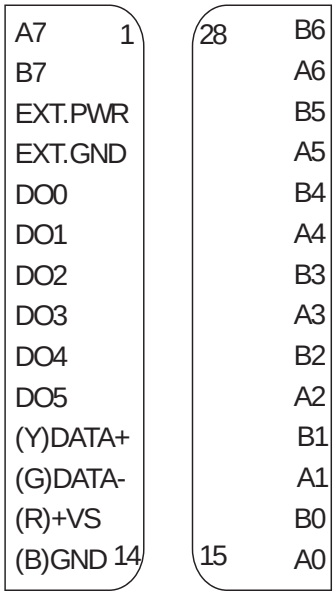
- Measure temperature with thermistor
- Support Modbus and DCON protocols.

M-7005

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	

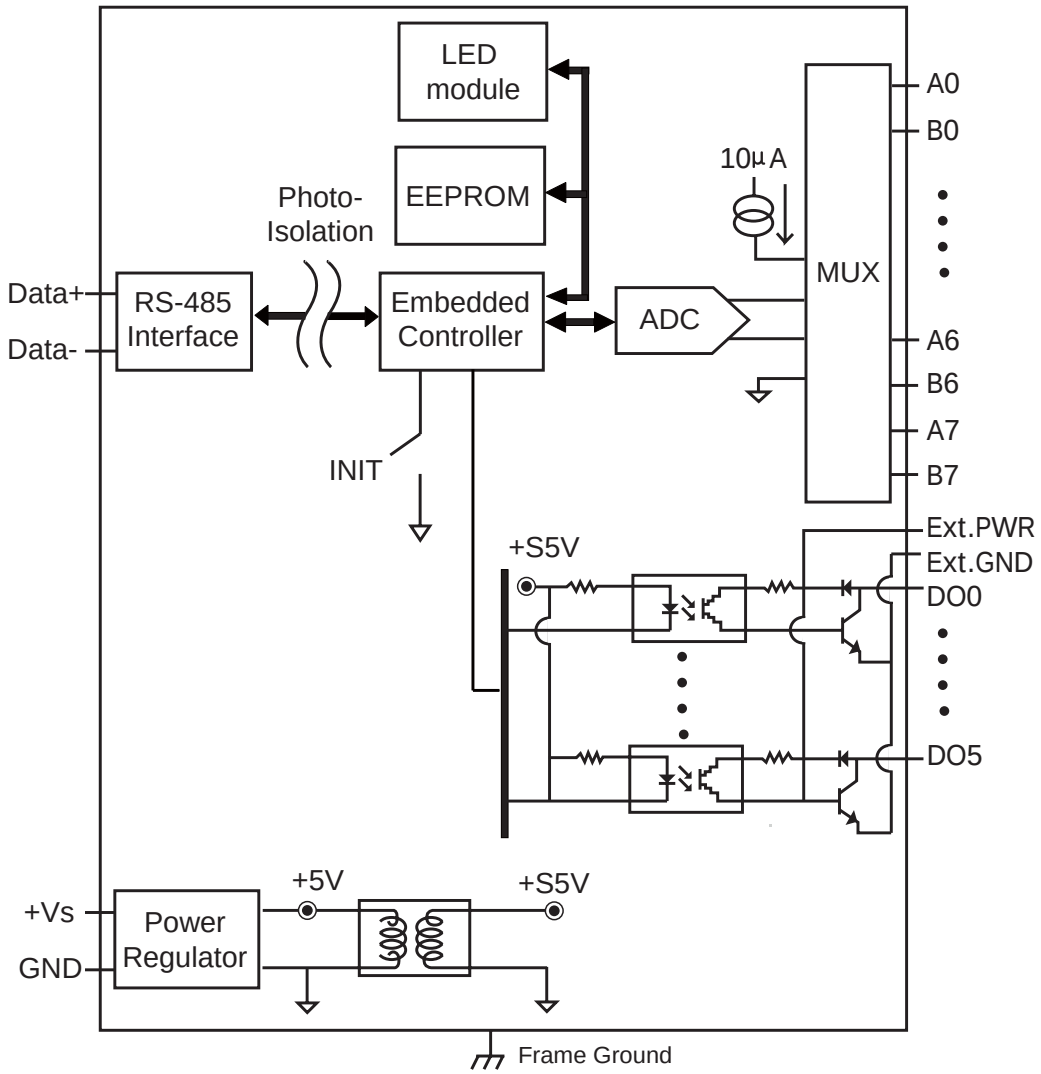
Pin Assignment



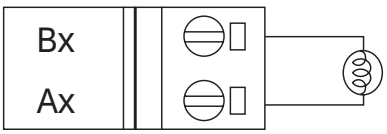
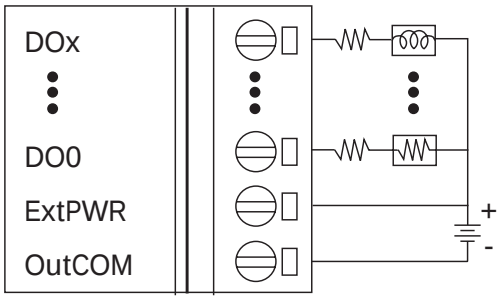
Ordering Information

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

Internal I/O Structure



Wire Connection

Thermistor Input	Alarm Output
	

M-7000 AI Modules

Analog Input

Strain Gauge

2-channel Strain Gauge Input Module

M-7016
M-7016D

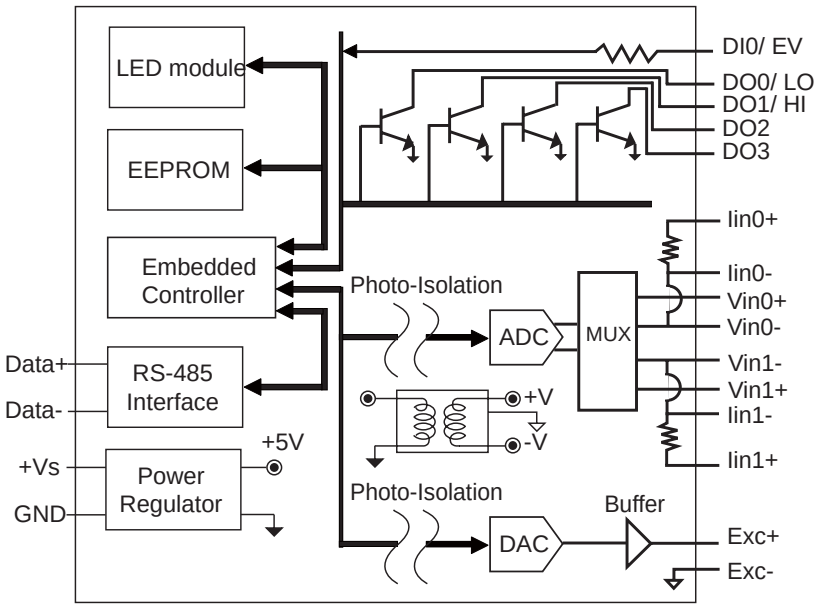
Description

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

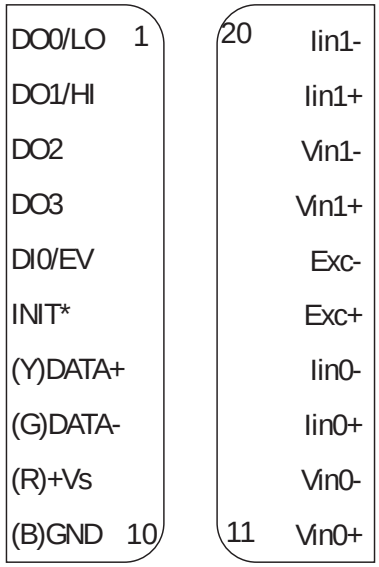
Specifications

■ 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		**■ Digital Iutput**	
Output channels	1	**Channels**	1
Logic level 0	+1V Max	**Logic level 0**	+1V Max
Max output load	40mA	**Logic level 1**	3.5V to 30V
Accuracy	+/-0.05% of FSR	**Input frequency**	50Hz (max.)
Input pulse width	+/-50ppm/ °C	**Input pulse width**	1mS (min.)
Output impedance	12 Ohms	**■ Digital Output**	
Isolation	3000 VDC	**Output channels**	4
■ Power		**Output type**	Sink, Open Collector to 30V
Power consumption	2.4W (M-7016) / 3.0W (M-7016D)	**Output load**	30mA max per channel
■ LED Display		**Power dissipation**	300mW
1 LED as Power/ Communication indicator ; 4 1/2 digits (for M-7016D)			

Internal I/O Structure

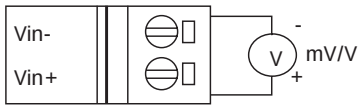


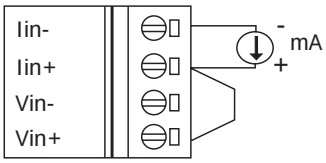
Pin Assignment



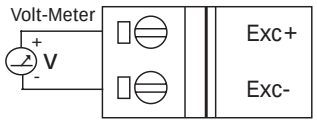
Wire Connection

Analog Input

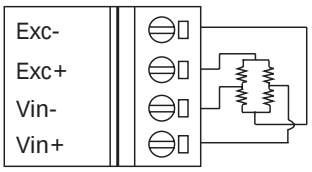




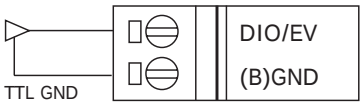
Analog Output

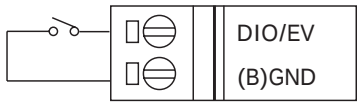


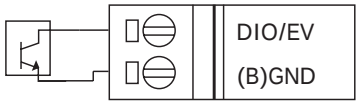
Bridge Sensor / Load Cell / Strain Gauge

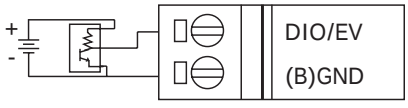


Digital Input

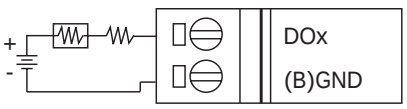


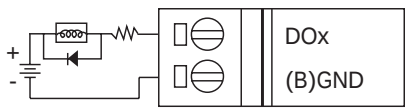






Digital Output





Ordering Information

M-7016-G	2-channel Strain Gauge Input Module (Gray Cover)
M-7016D-G	2-channel Strain Gauge Input Module with LED Display (Gray Cover)

M-7000 AO Modules

Analog Output

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

RoHS

Description

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

M-7022

CE FC

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		**■ Power Consumption**	
1 LED as Power/ Communication Indicator		**Power Consumption**	3.0W

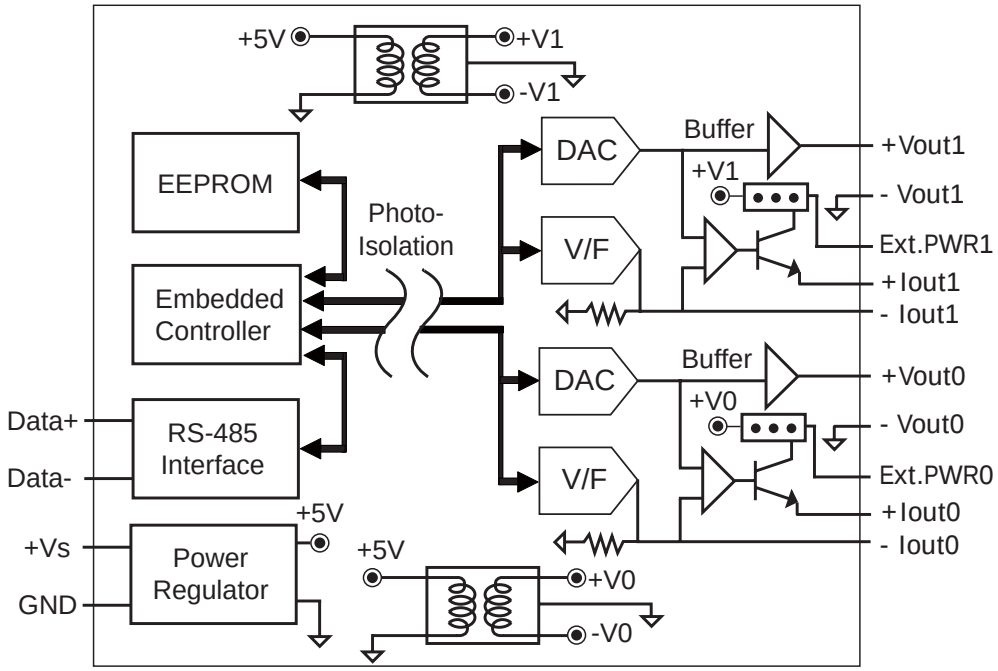
Ordering Information

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

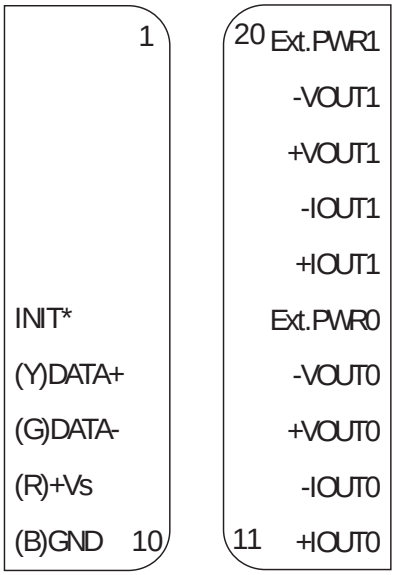
Related Products

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

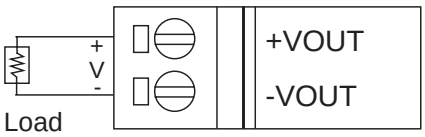


Pin Assignment

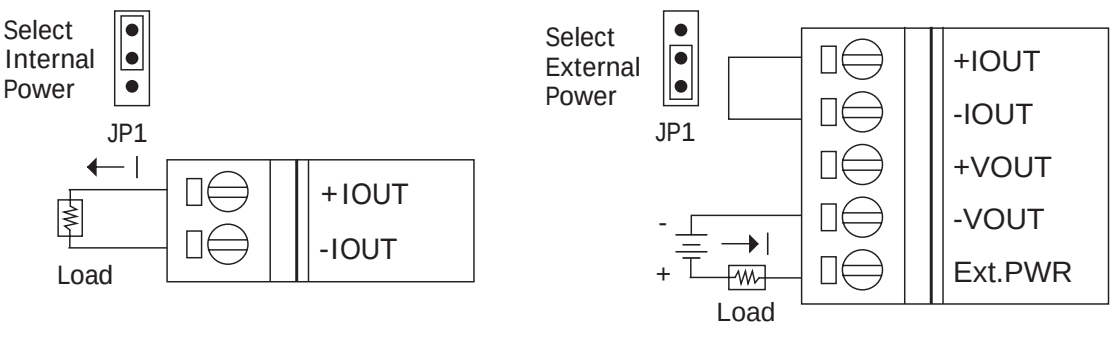


Wire Connection

Voltage Output



Current Output



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

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

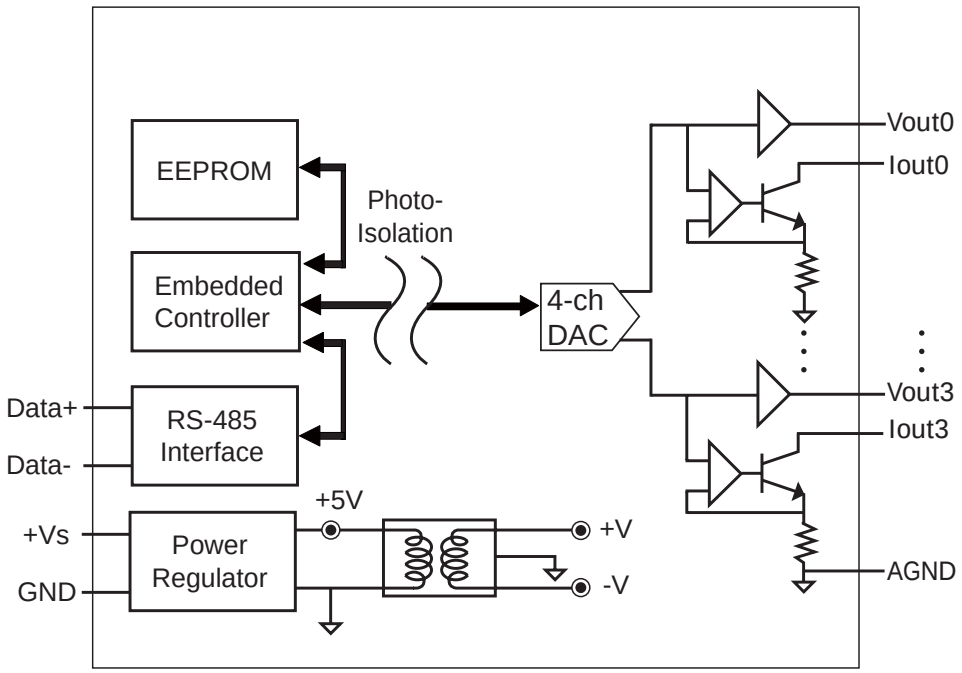
Ordering Information

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

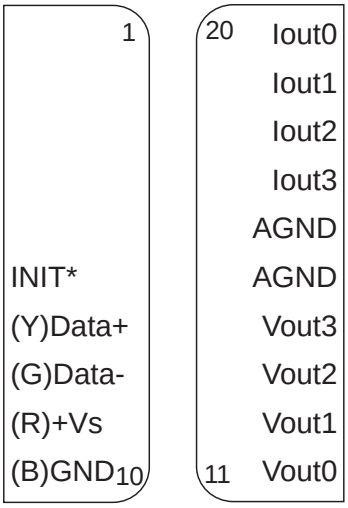
Related Products

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

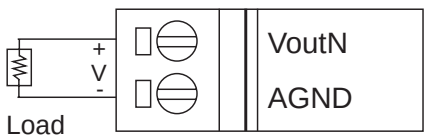


Pin Assignment

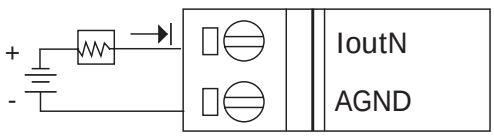


Wire Connection

Voltage Output



Current Output



DC Digital Input

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

M-7041
M-7041D

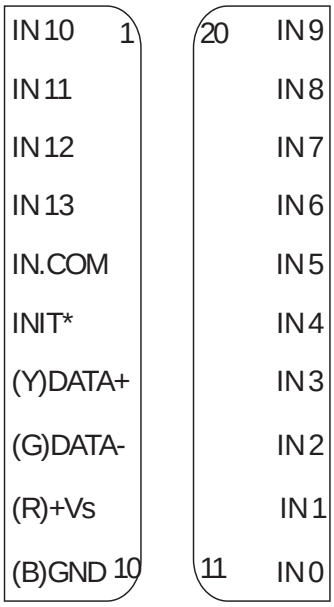
Description

- 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)	

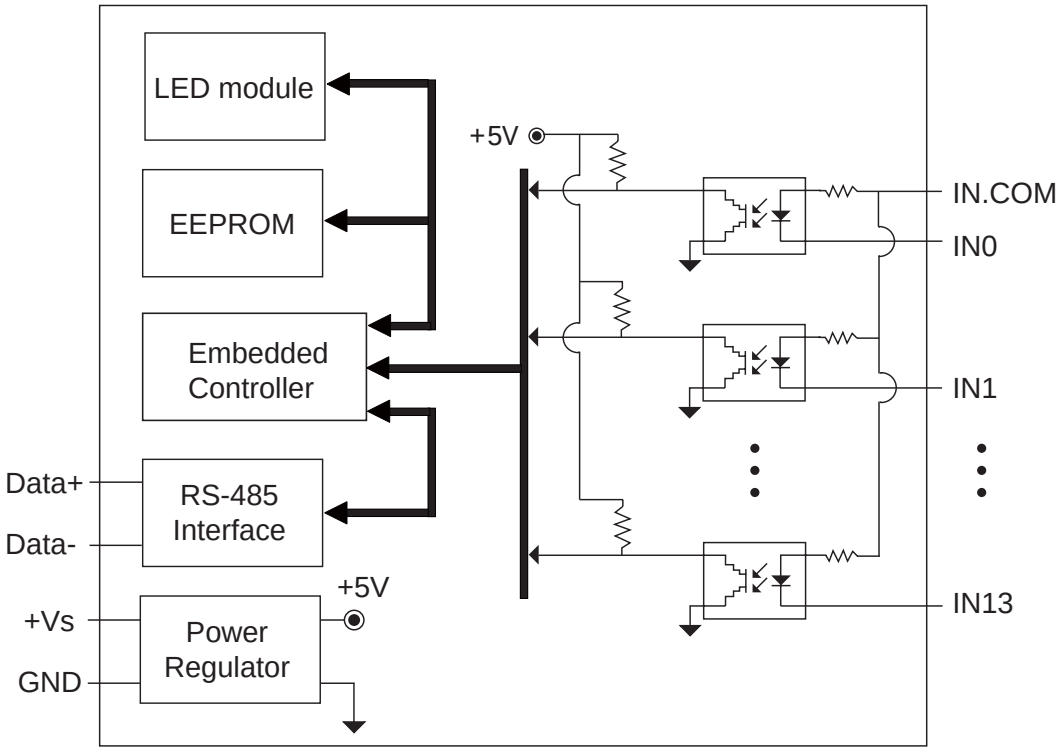
Pin Assignment



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)

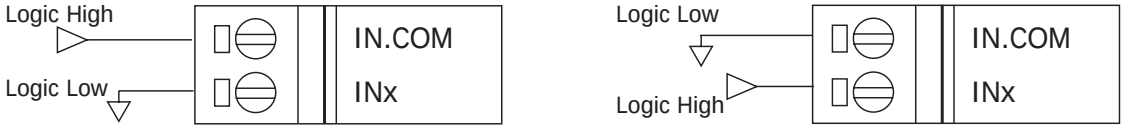
Internal I/O Structure



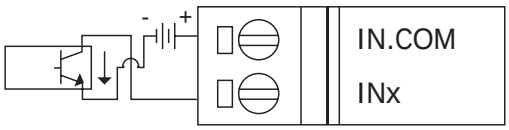
Wire Connection

Dry Contact

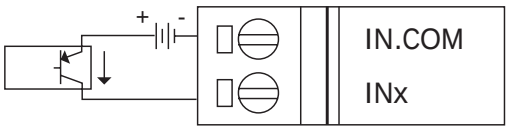
TTL/CMOS



NPN Output



PNP Output



DC Digital Input

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

RoHS

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.

M-7051
M-7051D

CE FC

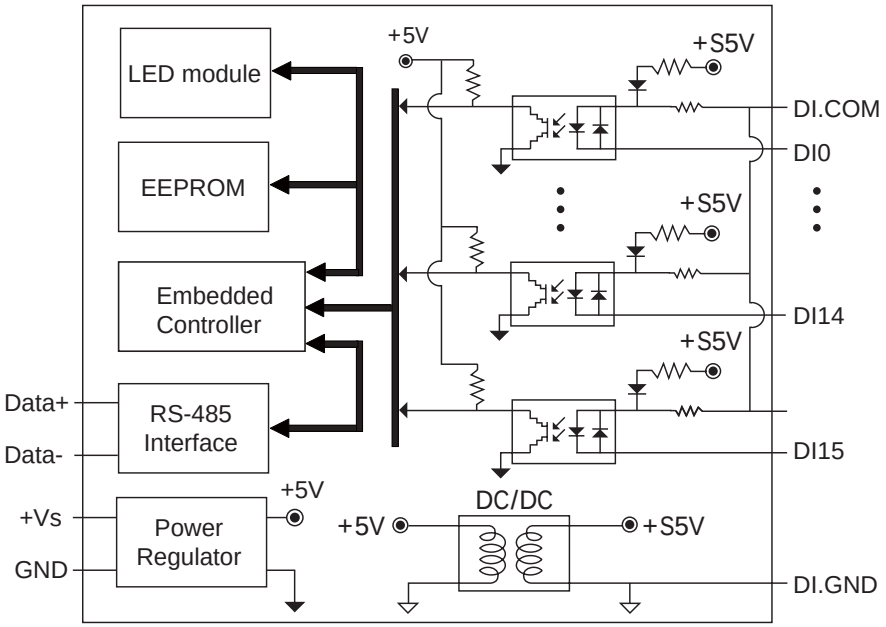
Specifications

■ 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)	

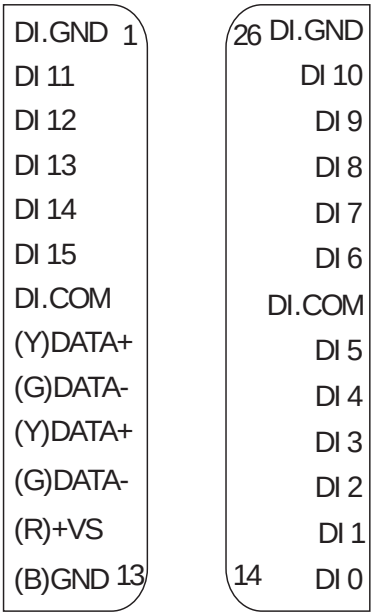
Ordering Information

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

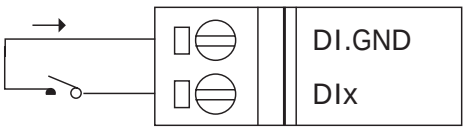


Pin Assignment



Wire Connection

Dry Contact



Wet Contact

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

RoHS

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.

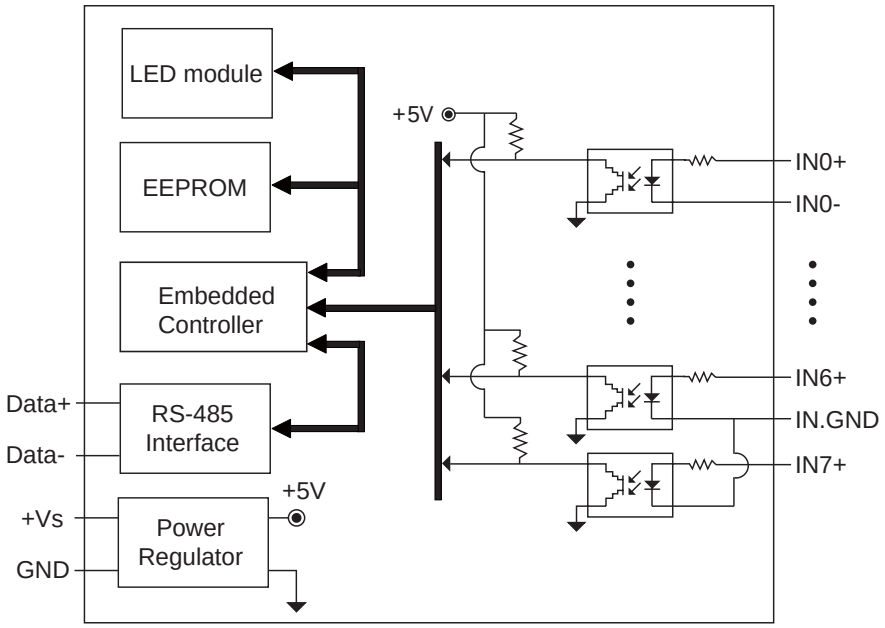
Specifications

■ 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)	

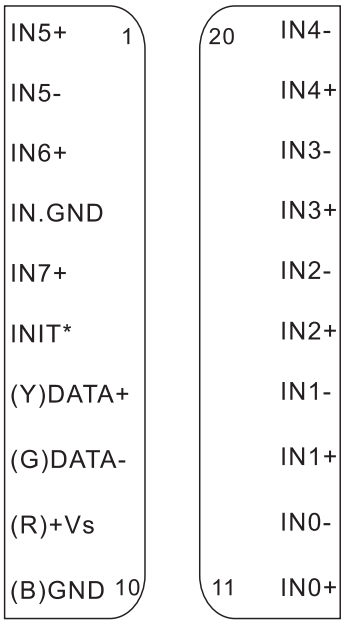
Ordering Information

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

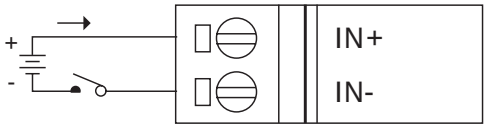


Pin Assignment

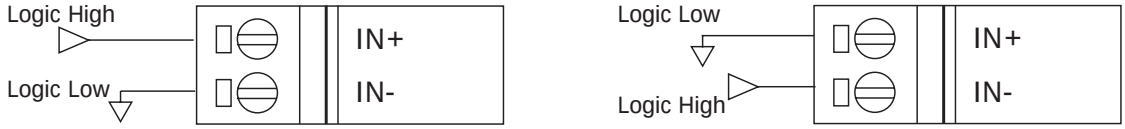


Wire Connection

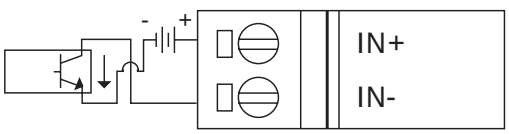
Wet Contact



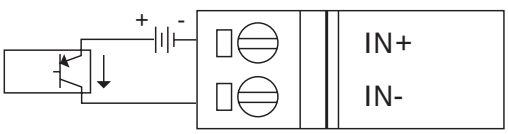
TTL/CMOS



NPN Output



PNP Output



DC Digital Input

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

M-7053
M-7053D

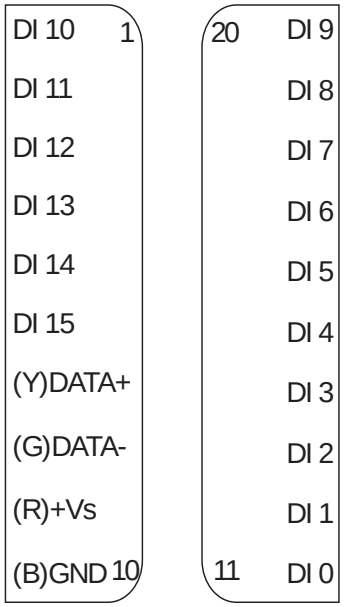
Description

- 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)	

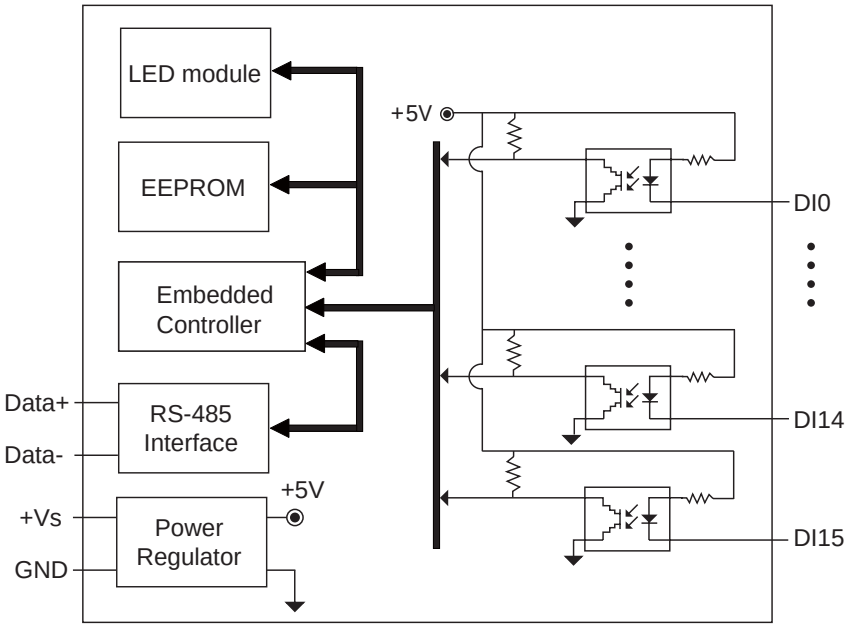
Pin Assignment



Ordering Information

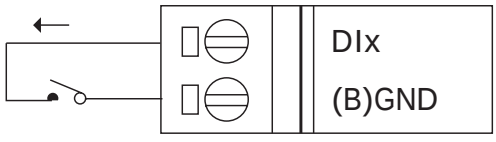
M-7053-G CR	16-channel Non-Isolated Digital Input Module with 16-bit Counters (Gray Cover) (RoHS)
M-7053D-G CR	16-channel Non-Isolated Digital Input Module with 16-bit Counters ith LED Display (Gray Cover) (RoHS)

Internal I/O Structure

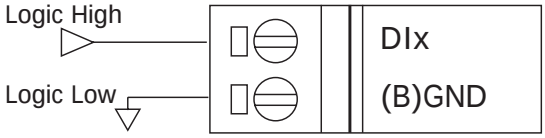


Wire Connection

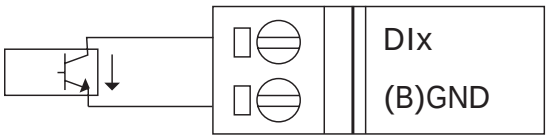
Wet Contact



TTL/CMOS



Open Collector



M-7000 D0 Modules

DC Digital Output

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

M-7045
M-7045D

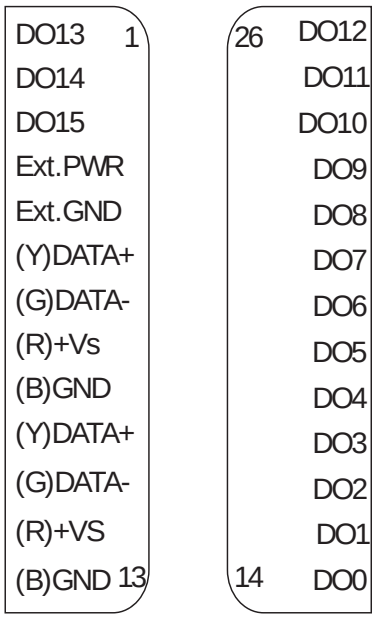
Description

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

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)	

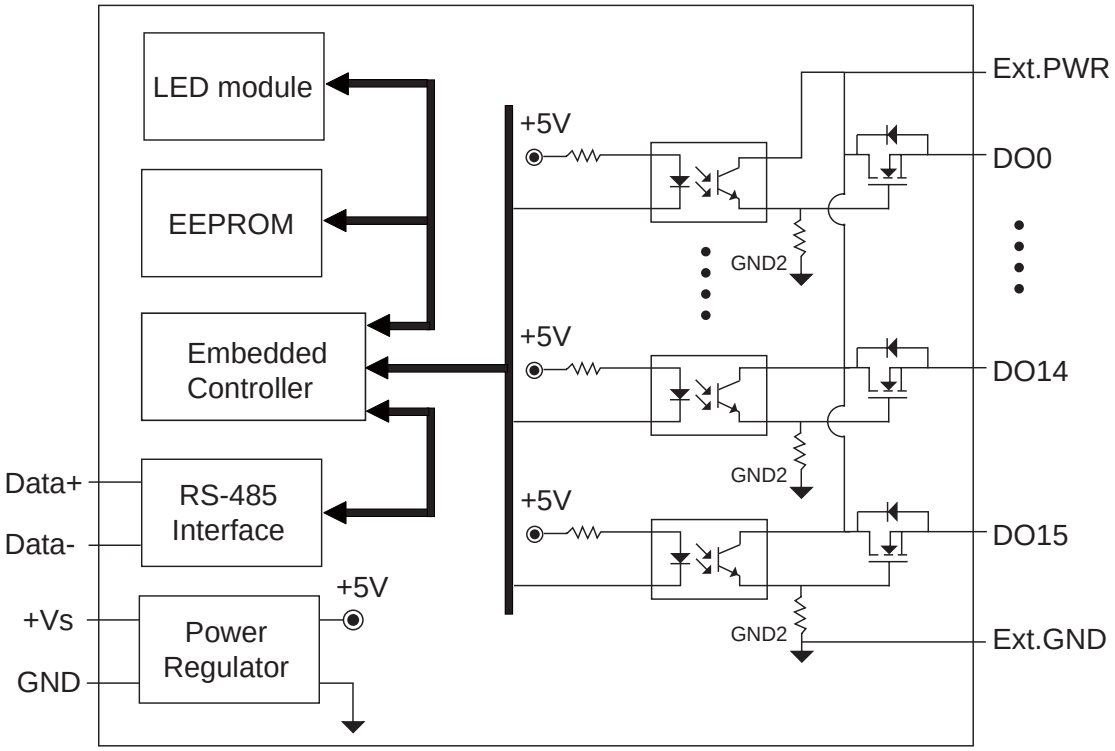
Pin Assignment



Ordering Information

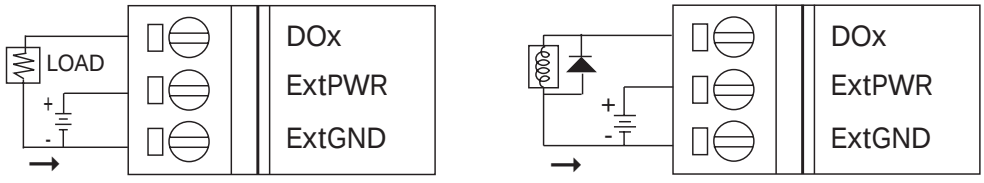
M-7045-G	16-channel Isolated Digital Output Module (Gray Cover)
M-7045D-G	16-channel Isolated Digital Output Module with LED display (Gray Cover)

Internal I/O Structure



Wire Connection

Digital Output



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

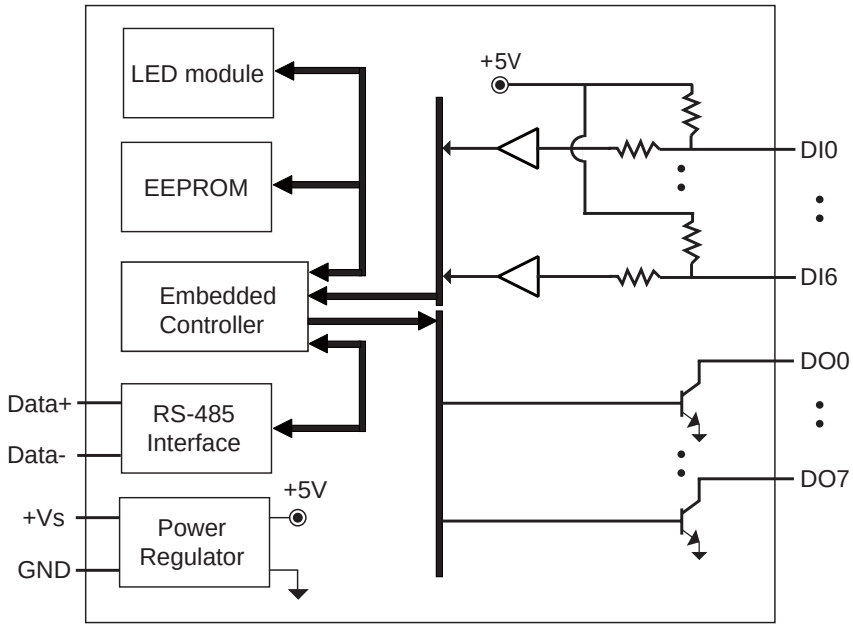
Specifications

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)	

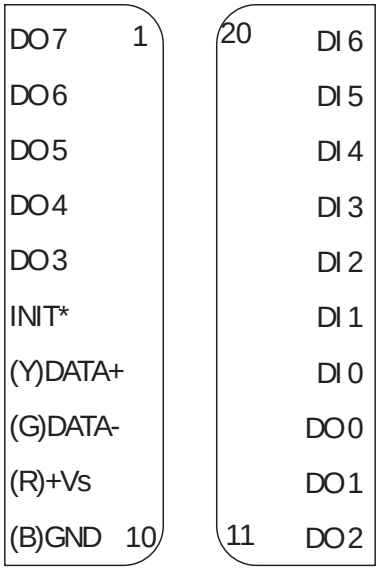
Ordering Information

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

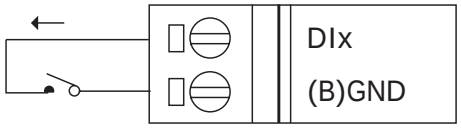
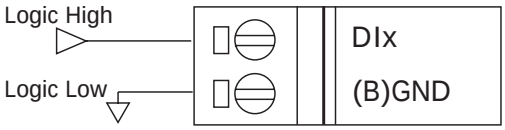
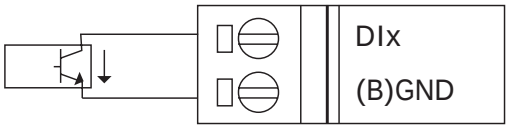
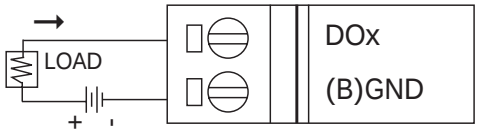
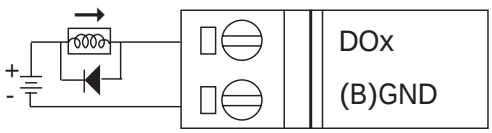
Internal I/O Structure



Pin Assignment



Wire Connection

Input Type	**Dry Contact Signal Input**	**TTL/CMOS Signal Input**
		
	Open Collector	
		
Output Type	**Open Collector**	
		

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	
		Power consumption	0.8W (M-7055) / 1.6W (M-7055D)

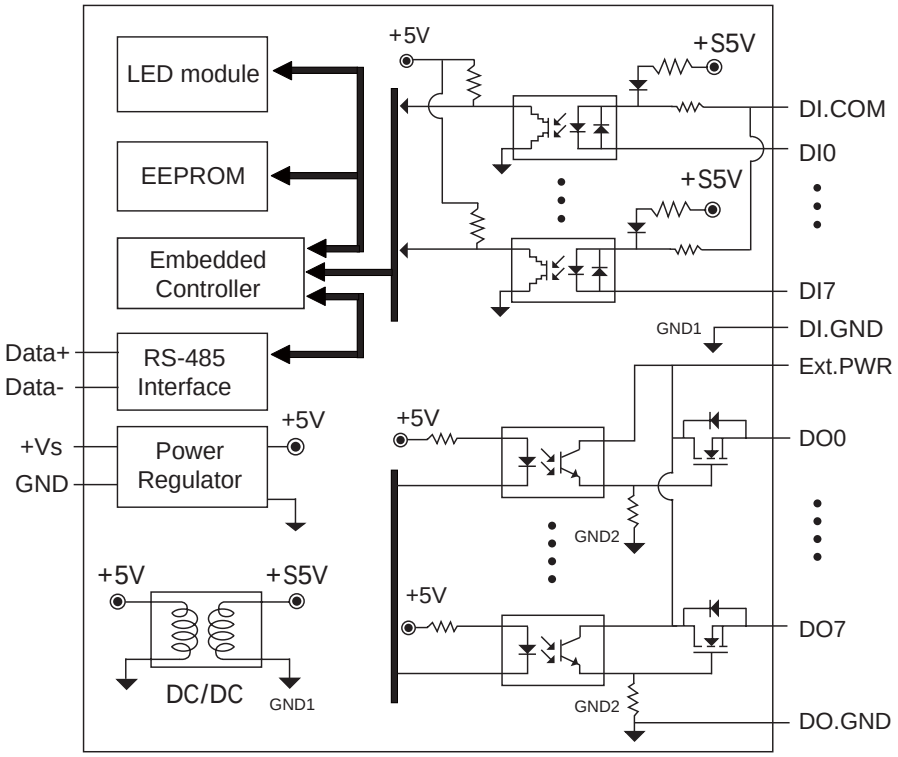
■ LED Display

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

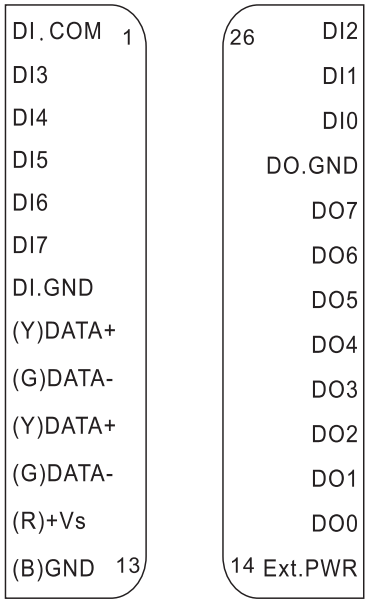
Ordering Information

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

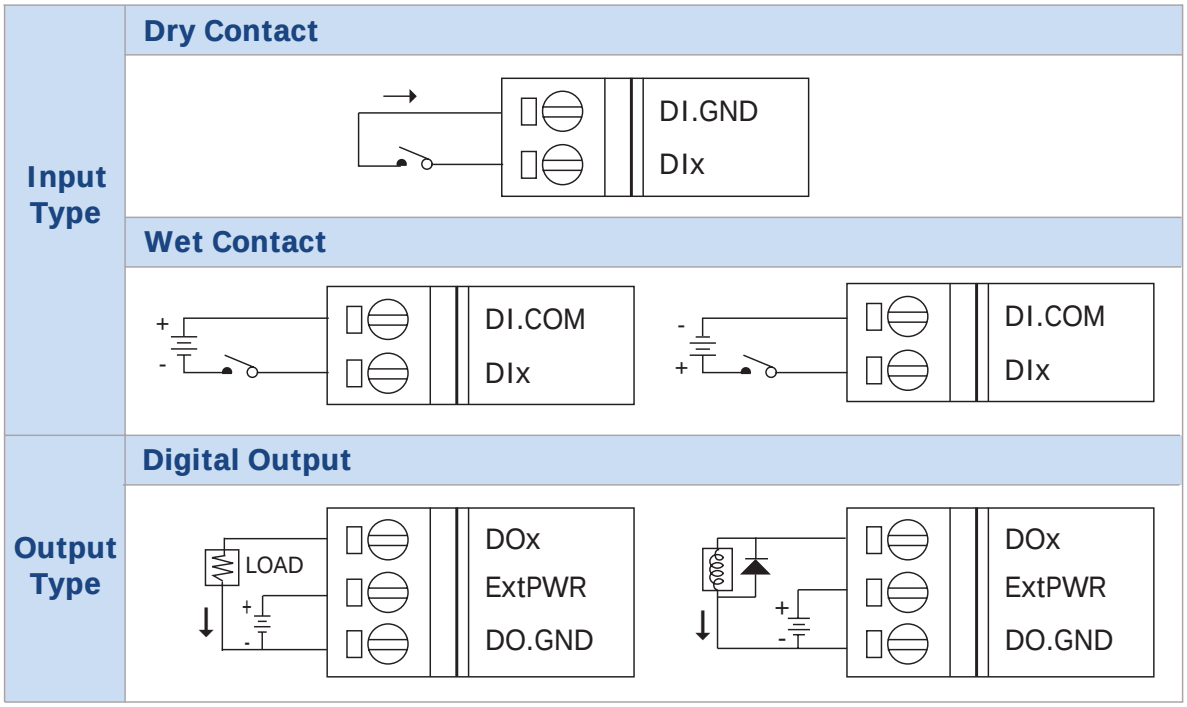
Internal I/O Structure



Pin Assignment



Wire Connection



Power Relay Output

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

RoHS

Description

- Traditional Relay, limitted life time is
  - Machnical: 20x10^6 OPS
  - Electrical: 100x10^3 Full Load
- Support Modbus and DCON protocols.

M-7060
M-7060D

CE FC

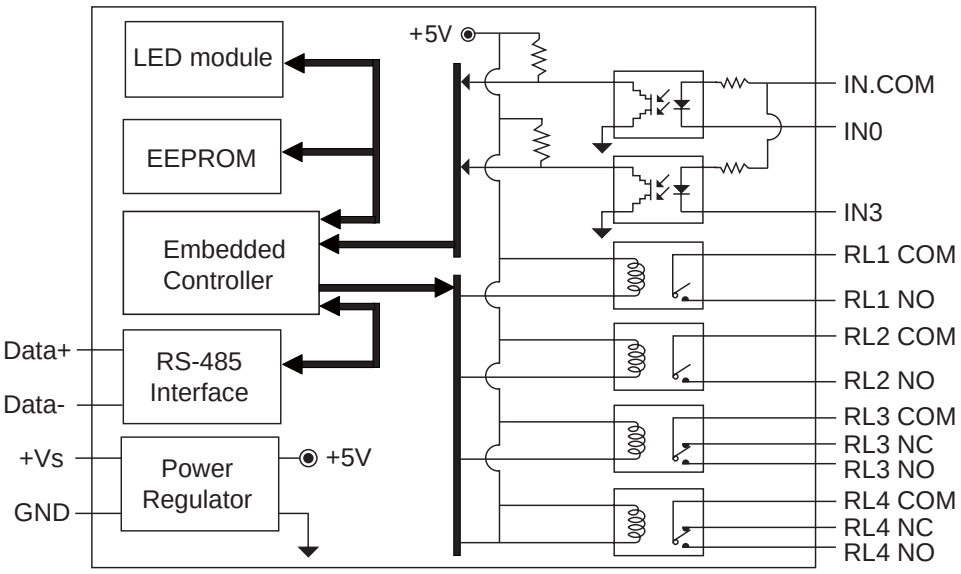
Specifications

■ 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)

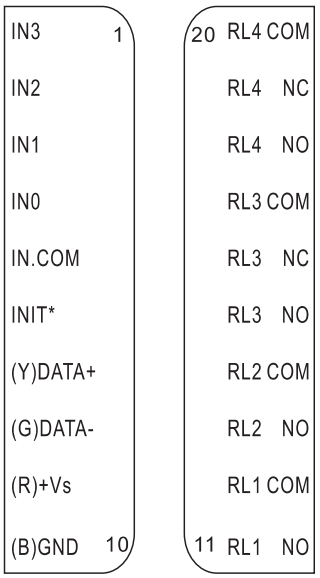
Ordering Information

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

Internal I/O Structure



Pin Assignment



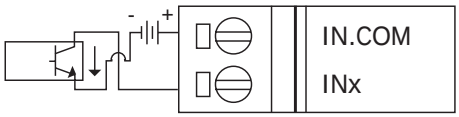
Wire Connection

Input Type

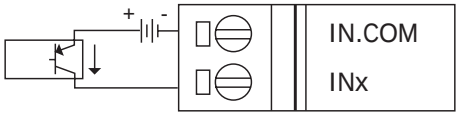
Dry Contact

TTL/CMOS

NPN Output

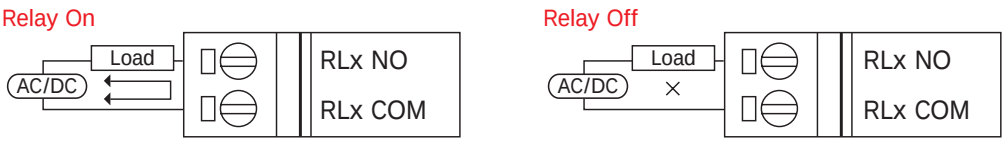


PNP Output

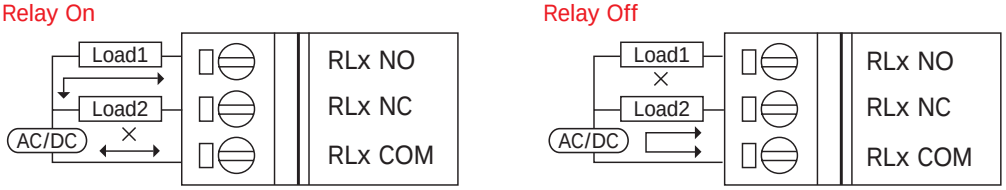


Output Type

Relay Output in RL1 and RL2



Relay Output in RL3 and RL4



Power Relay Output

7-channels Relay Output Module

Description

- Traditional Relay, limitted life time is
  - Machnical: 20x10^6 OPS
  - Electrical: 100x10^3 Full Load
- Support Modbus and DCON protocols.

M-7067
M-7067D

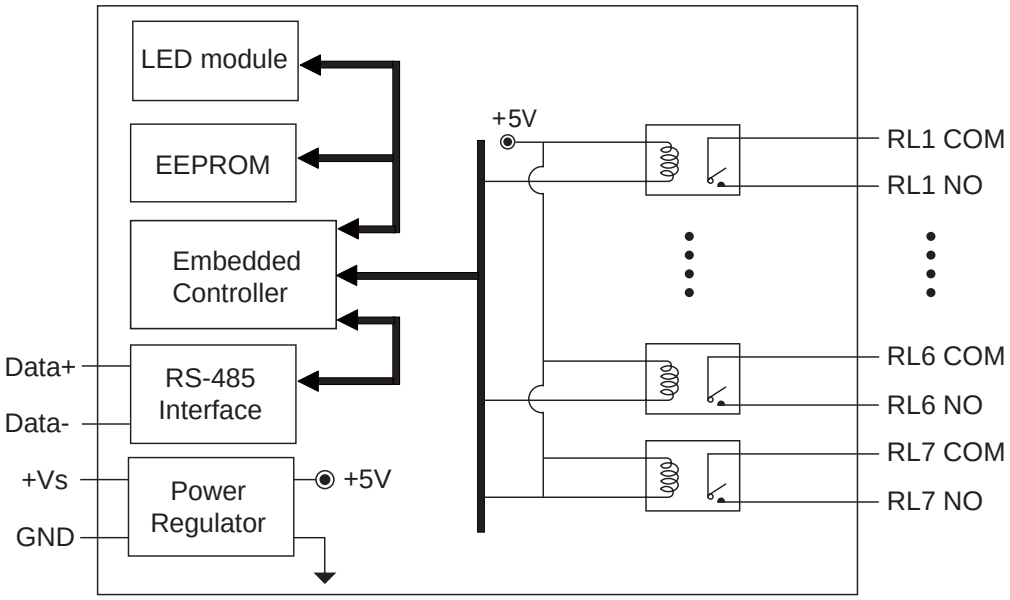
Specifications

■ 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 X 10^6 OPS Electrical : 100 X 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)	

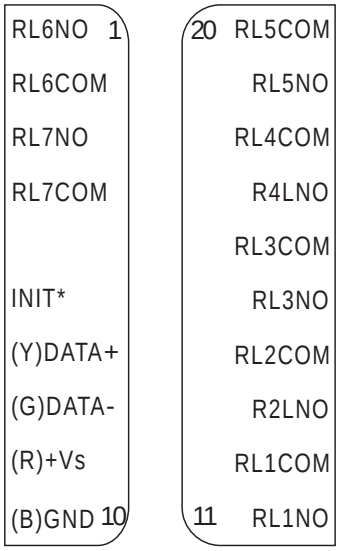
Ordering Information

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)

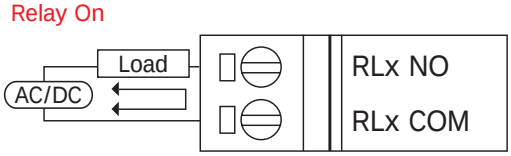
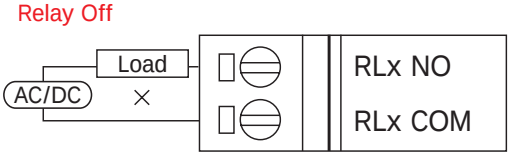
Internal I/O Structure



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	Relay On 	Relay Off 

Counter/Frequency Input Module

Description

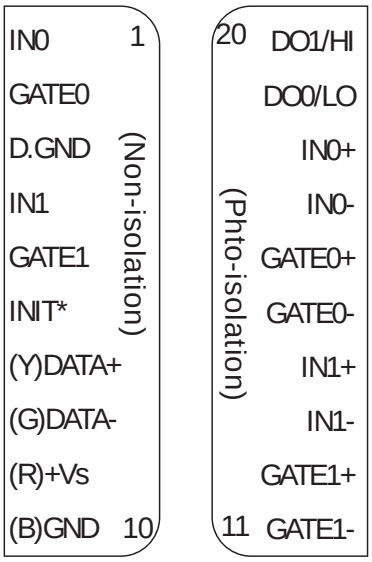
- Input signal range can be 1Hz to 100KHz
- Support Modbus and DCON protocols.
- M-7080B/BD: built-in virtual battery back up for counter value

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

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)	

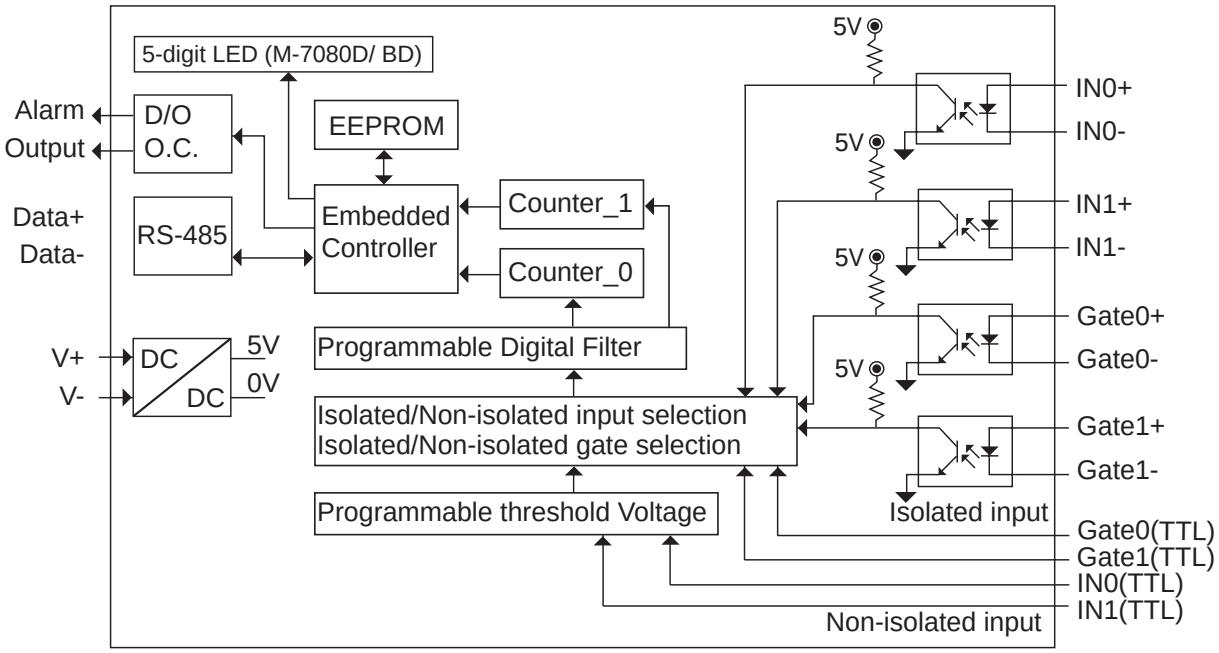
Pin Assignment



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

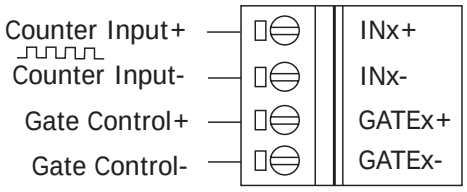


Wire Connection

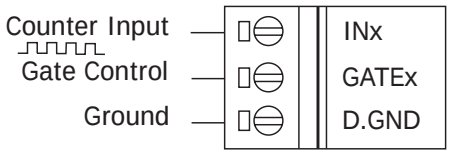
Input Type

Counter Type

Isolation

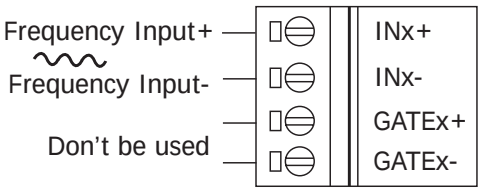


Non-isolation

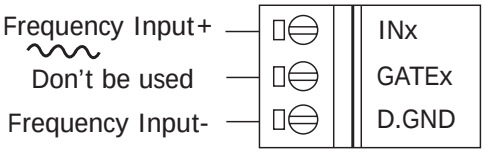


Frequency Type

Isolation

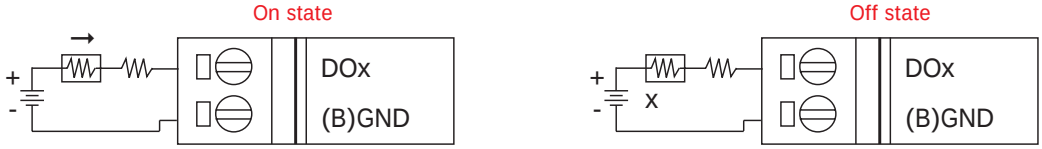


Non-isolation

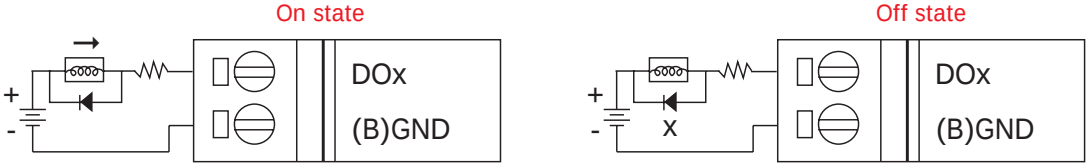


Output Type

Resistance Load



Inductance Load



i-8000 Introduction

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 expasion 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 RE-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
Microprocesseor	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 intput 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 intput 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 intput 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 intput 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 intput 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.

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	-	-

AI Modules

i-8017H
i-8017H(G)

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

RoHS

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

CE FC

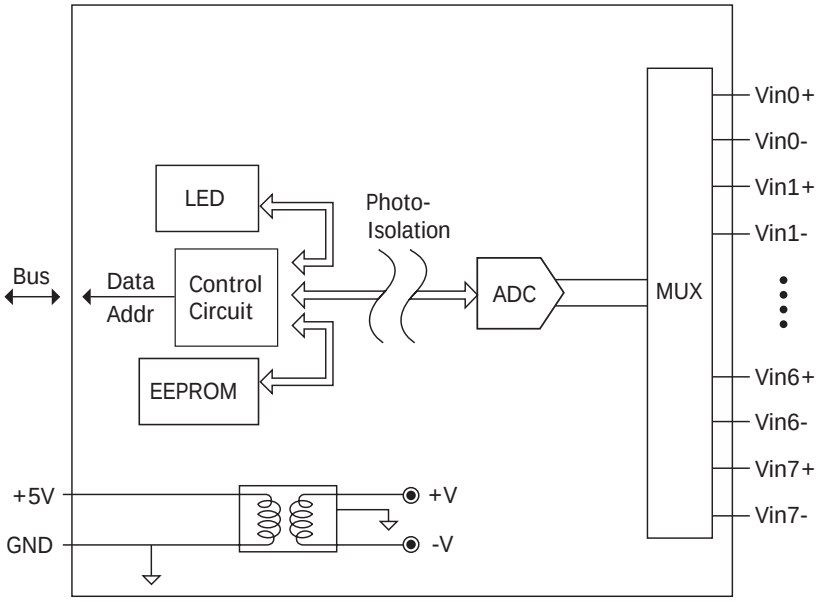
Specifications

Analog Input			
Input channels	8	**Input Bandwidth**	100K Hz
Input type	Differental	**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

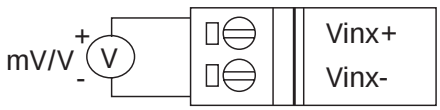


Pin Assignment

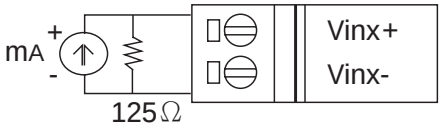
Terminal No.	Pin Assignment Name
01	Vin0+
02	Vin0-
03	Vin1+
04	Vin1-
05	Vin2+
06	Vin2-
07	Vin3+
08	Vin3-
09	Vin4+
10	Vin4-
11	Vin5+
12	Vin5-
13	Vin6+
14	Vin6-
15	Vin7+
16	Vin7-

Wire Connection

Voltage Input Wiring



Current Input Wiring



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

AI Modules

i-8017HS
i-8017HS(G)

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

RoHS

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

CE FC

Specifications

Analog Input	
Input channels	8/ 16 ch
Input type	Differental / Single-ended
Input impedance	200K
Input range	±10V, ±5V, ±2.5V, ±1.25V, ±20mA
Input bandwidth	100K Hz
Resolution	14-bit
Accuracy	± 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

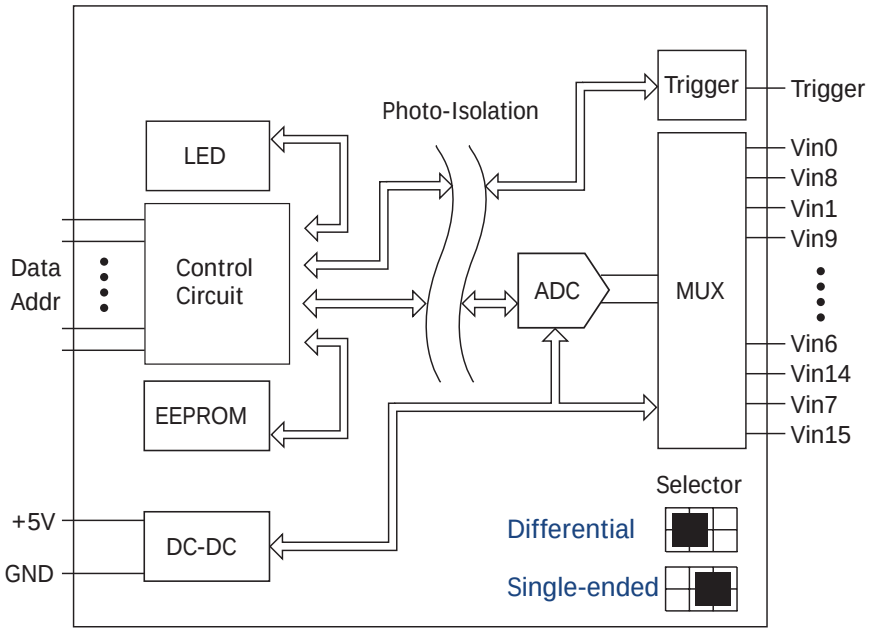
Note :

- 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)

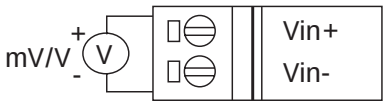
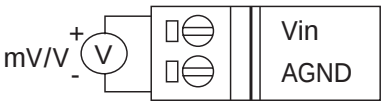
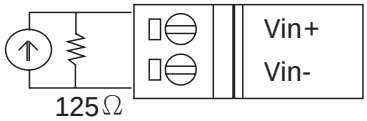
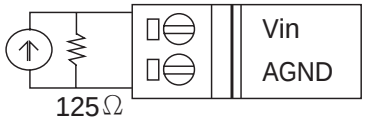
Internal I/O Structure



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		
Current Input Wiring		

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

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

i-8024
i-8024(G)

Specifications

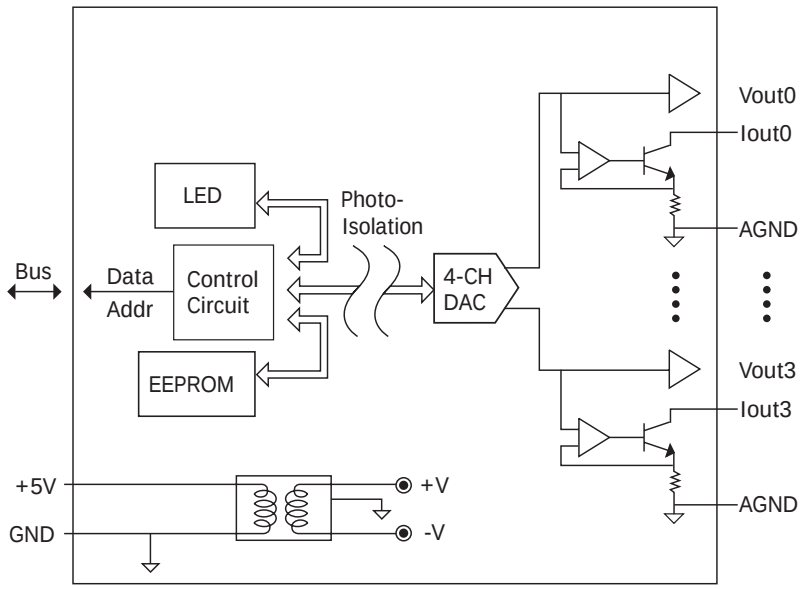
■ Analog Output			
Output channels	4	**Resolution**	14-bit
Output type	+/- 10V, 0 ~ +20mA	**Voltage output capability**	10V@5mA
Zero drift	Voltage: +/-30μV/ °C Current: +/-0.2μA/ °C	**Programmable output slope**	0.125 to 2048 mA/ second 0.0625 to 1024 V/ second
Span drift	+/- 20ppm/°C	**Current load 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	■ Power Consumption
1 LED as Power/ Communication Indicator	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)

Internal I/O Structure

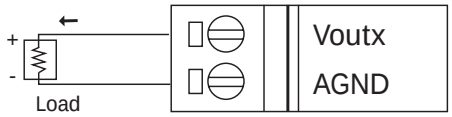


Pin Assignment

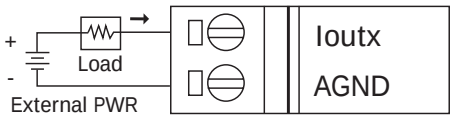
Terminal No.	Pin Assignment Name
01	Iout0
02	AGND
03	Iout1
04	AGND
05	Iout2
06	AGND
07	Iout3
08	AGND
09	Vout0
10	AGND
11	Vout1
12	AGND
13	Vout2
14	AGND
15	Vout3
16	AGND

Wire Connection

Voltage Output Wiring



Current Output Wiring



DO Modules

16-channel Isolated Open-Collector Output Module

i-8037
i-8037(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	
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	

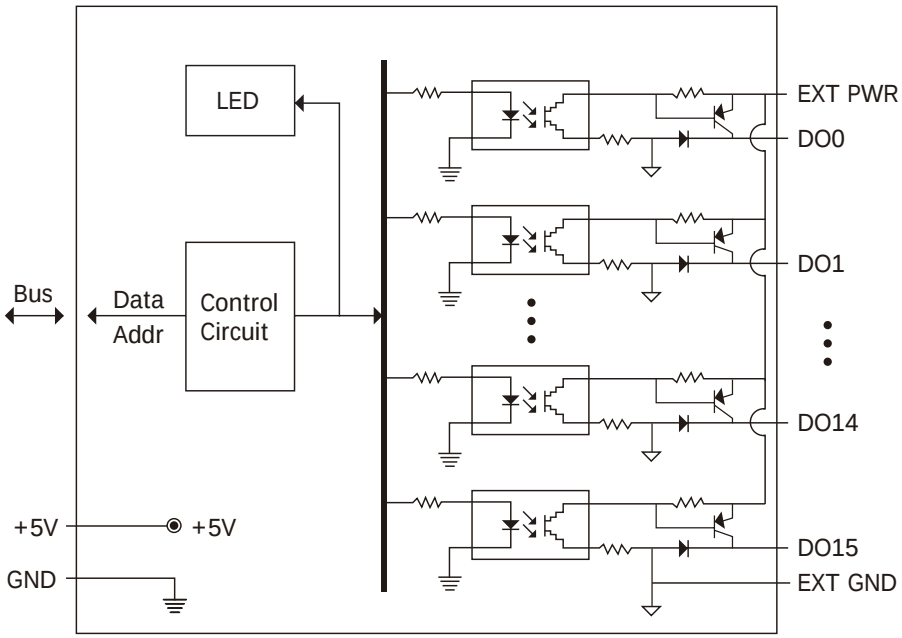
Pin Assignment

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

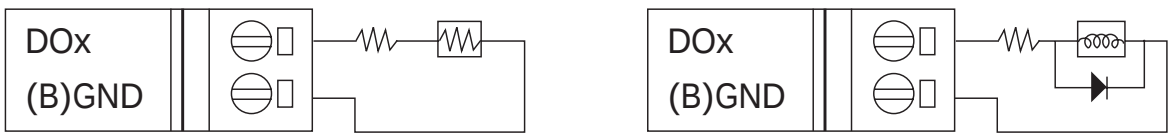
i-8037 CR	16-channel Isolated Open-Collector Output Module (Blue Cover) (RoHS)
i-8037-G CR	16-channel Isolated Open-Collector Output Module (Gray Cover) (RoHS)

Internal I/O Structure



Wire Connection

Output



i-8040
i-8040(G)

32-channel Isolated Digital Input Module

RoHS

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

CE FC

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

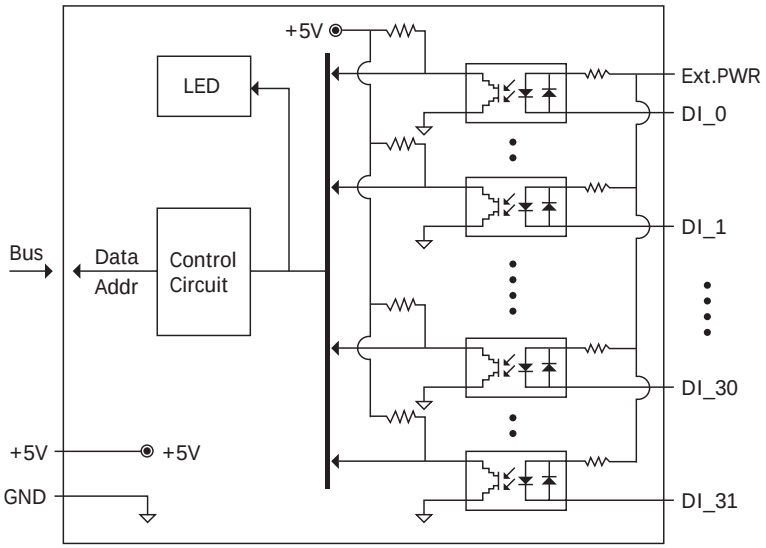
i-8040 CR	32-channel Isolated Digital Input Module (Blue Cover) (RoHS)
i-8040-G CR	32-channel Isolated Digital Input Module (Gray Cover) (RoHS)

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 Moun ting and 37-pin D-sub Connector (pitch:5.08mm)
DN-37-381-A	I/O Connector Block with DIN-Rail Moun ting 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

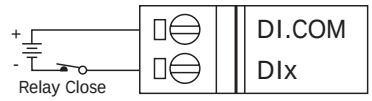
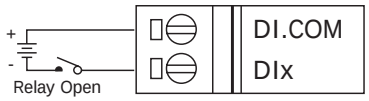
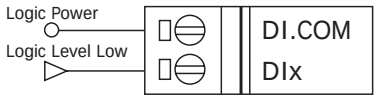
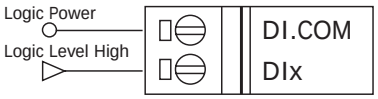
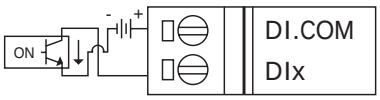
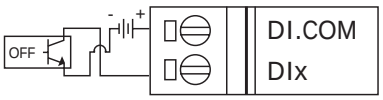
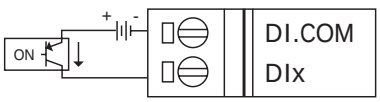
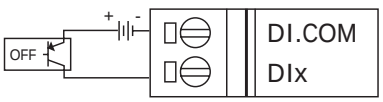


Pin Assignment

Pin Assignment Name	Terminal No.		Pin Assignment Name
Ext.PWR	19	37	Ext.PWR
NC	18	36	NC
NC	17	35	DI_31
DI_15	16	34	DI_30
DI_14	15	33	DI_29
DI_13	14	32	DI_28
DI_12	13	31	DI_27
DI_11	12	30	DI_26
DI_10	11	29	DI_25
DI_9	10	28	DI_24
DI_8	09	27	DI_23
DI_7	08	26	DI_22
DI_6	07	25	DI_21
DI_5	06	24	DI_20
DI_4	05	23	DI_19
DI_3	04	22	DI_18
DI_2	03	21	DI_17
DI_1	02	20	DI_16
DI_0	01		

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
		

Digital Output Modules

i-8041
i-8041(G)

32-channel Isolated Digital Output Module

RoHS

Description

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

CE FC

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

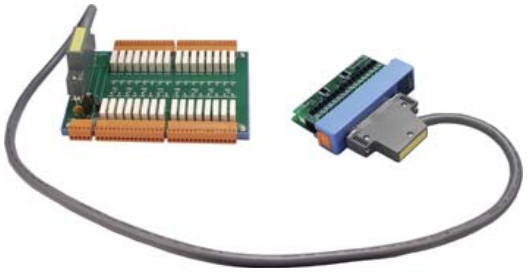
0.34A @ 5V = 1.7W ,
+/- 5% For Hardware version 9.0

LED Display

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)



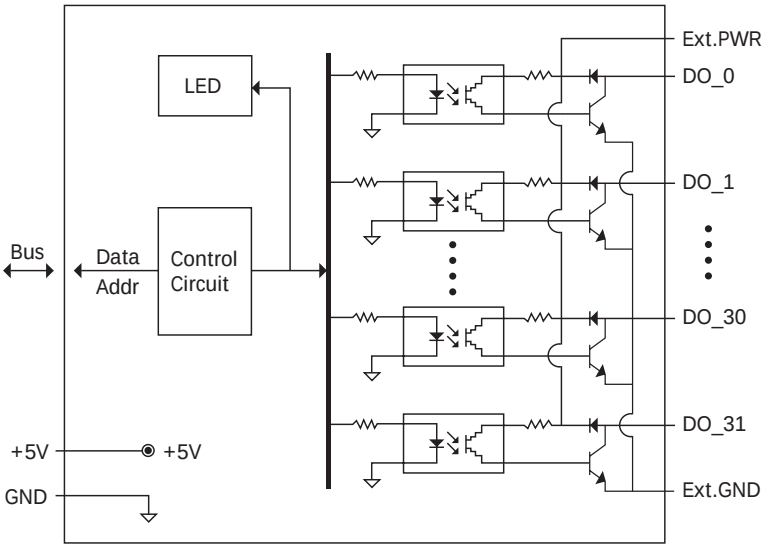
i-8041 and i-87041 with DN-8K32R

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 Moun ting and 37-pin D-sub Connector (pitch:5.08mm)
DN-37-381-A	I/O Connector Block with DIN-Rail Moun ting 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

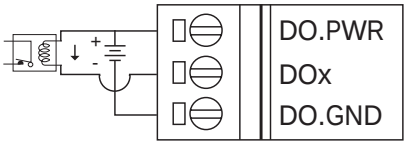
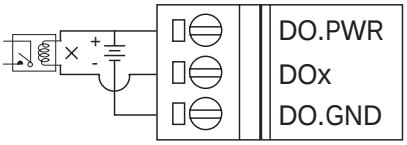
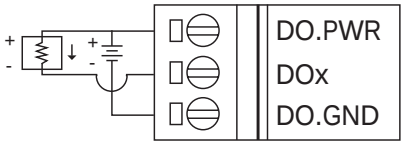
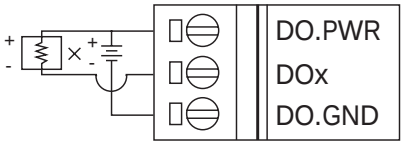


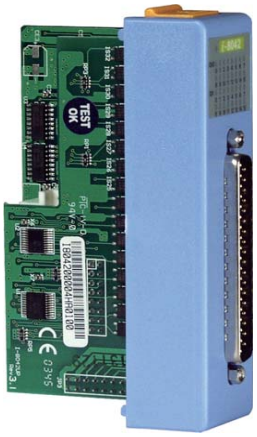
Pin Assignment

Pin Assignment Name	Terminal No.		Pin Assignment Name
Ext.PWR	19	37	Ext.PWR
Ext.GND	18	36	Ext.GND
Ext.GND	17	35	DO_31
DO_15	16	34	DO_30
DO_14	15	33	DO_29
DO_13	14	32	DO_28
DO_12	13	31	DO_27
DO_11	12	30	DO_26
DO_10	11	29	DO_25
DO_9	10	28	DO_24
DO_8	09	27	DO_23
DO_7	08	26	DO_22
DO_6	07	25	DO_21
DO_5	06	24	DO_20
DO_4	05	23	DO_19
DO_3	04	22	DO_18
DO_2	03	21	DO_17
DO_1	02	20	DO_16
DO_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
	Relay ON	Relay Off
Drive Relay		
Resistance Load		



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

RoHS

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)

CE FC

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

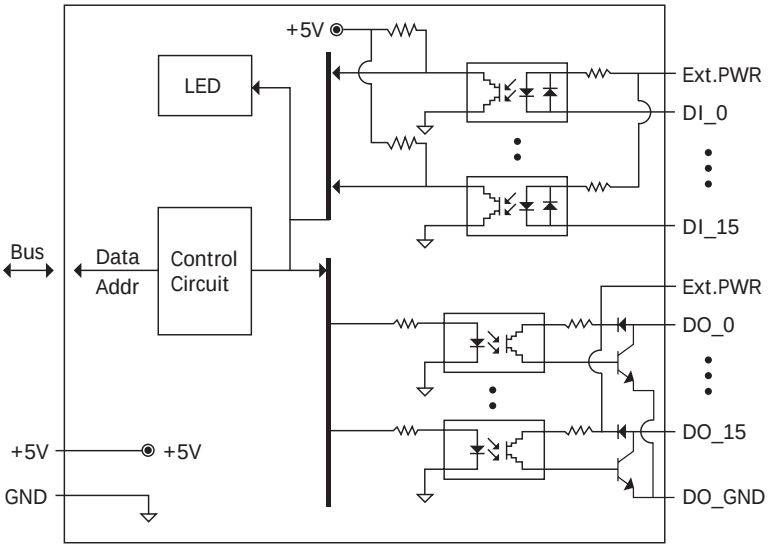
DN-37-A	I/O Connector Block with DIN-Rail Moun ting and 37-pin D-sub Connector (pitch:5.08mm)
DN-37-381-A	I/O Connector Block with DIN-Rail Moun ting and 37-pin D-sub Connector (pitch:3.81mm)
CA-3705A/10A/15A	Male-Female D-sub cable 0.5/1/1.5M

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

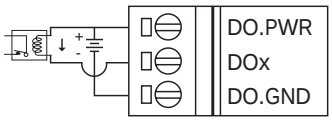
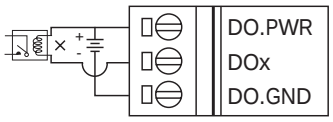
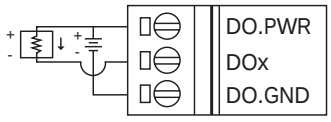
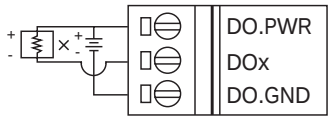


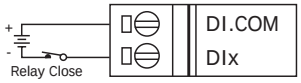
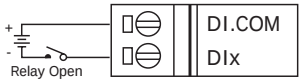
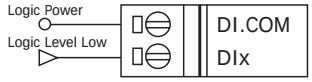
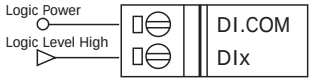
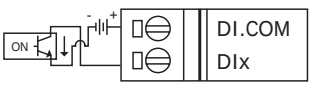
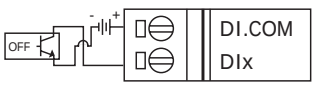
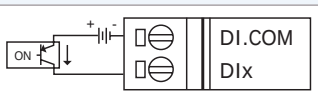
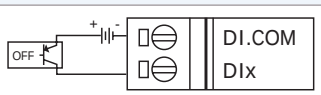
Pin Assignment

Pin Assignment Name	Terminal No.		Pin Assignment Name
Ext.PWR	19	37	Ext.PWR
Ext.GND	18	36	Ext.GND
Ext.GND	17	35	DO_12
DI_15	16	34	DO_13
DI_14	15	33	DO_14
DI_13	14	32	DO_15
DI_12	13	31	DO_8
DI_11	12	30	DO_9
DI_10	11	29	DO_10
DI_9	10	28	DO_11
DI_8	09	27	DO_4
DI_7	08	26	DO_5
DI_6	07	25	DO_6
DI_5	06	24	DO_7
DI_4	05	23	DO_0
DI_3	04	22	DO_1
DI_2	03	21	DO_2
DI_1	02	20	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	Relay Off 	Relay Off 
Resistance Load		

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 

16-channel Universal Digital I/O Module

RoHS

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

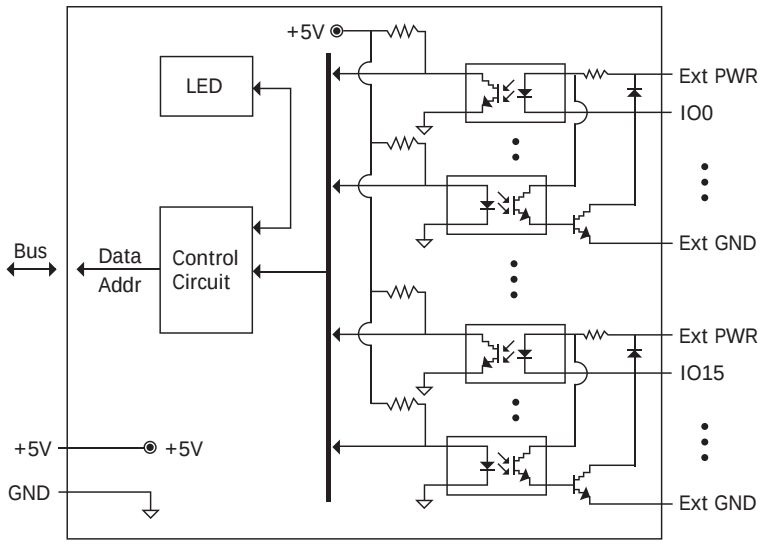
i-8050
i-8050(G)

CE FC

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 version2.4
LED	1 LED as Power Indicator, 16 LEDs as Digital Input and Output Indicators		

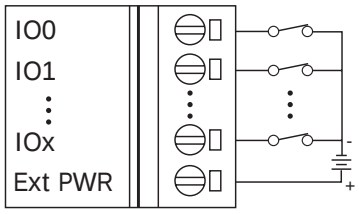
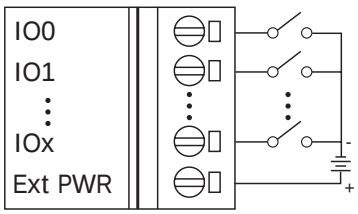
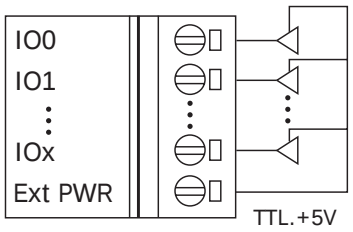
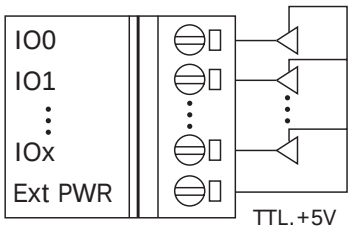
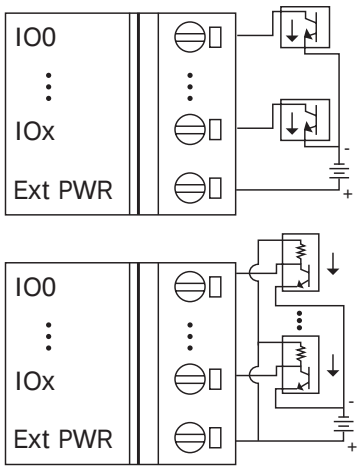
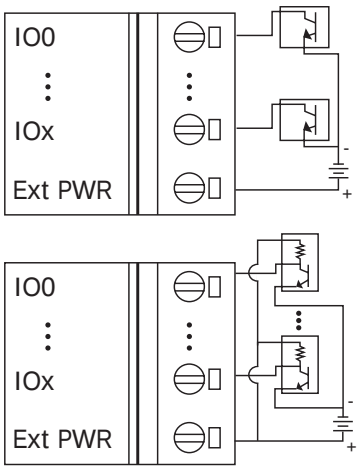
Internal I/O Structure

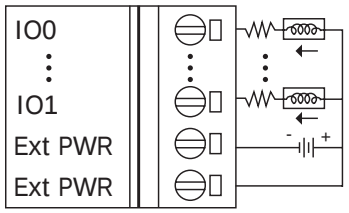
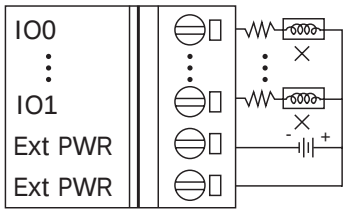


Pin Assignment

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

Intput 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)

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)

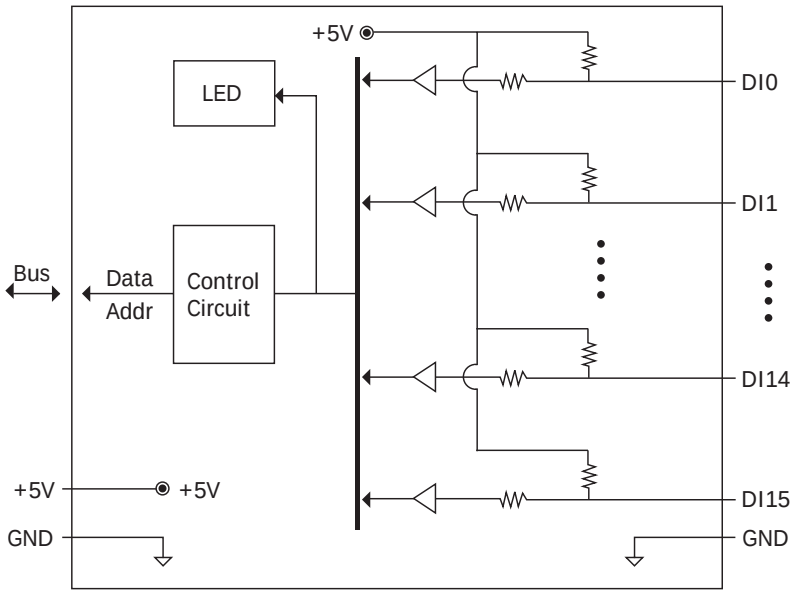
Specifications

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)

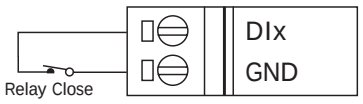
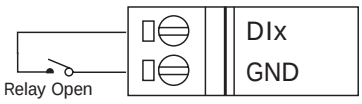
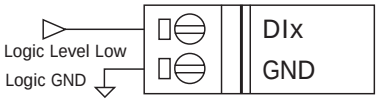
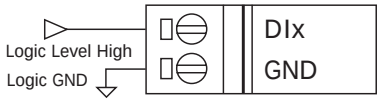
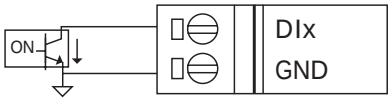
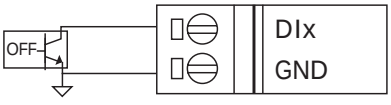
Internal I/O Structure



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

Intput 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
		

8-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-8052
i-8052(G)

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	

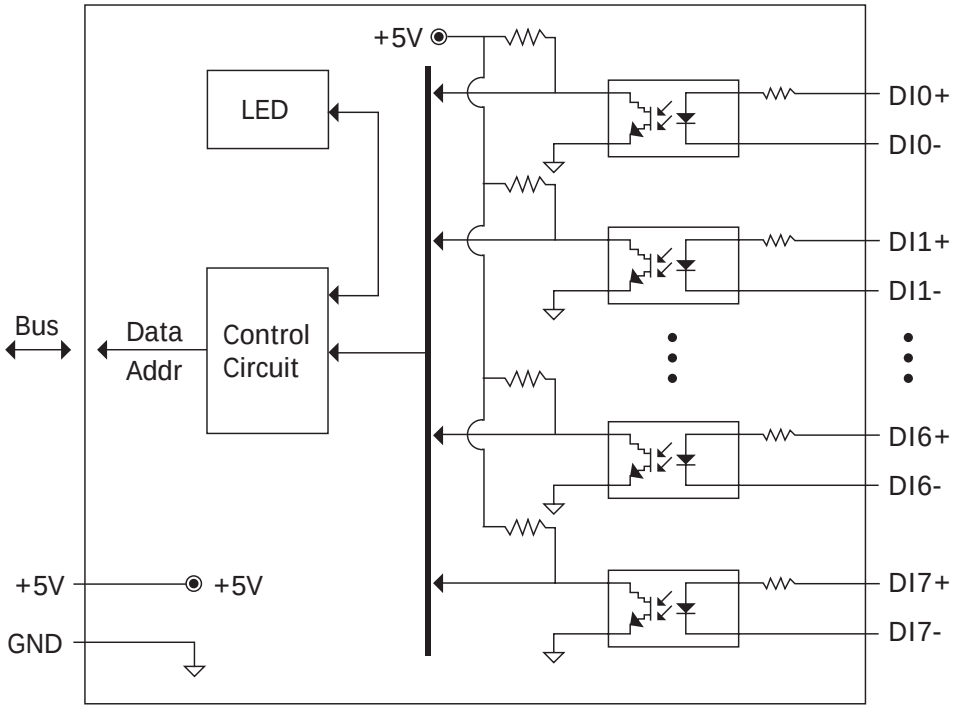
Pin Assignment

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-

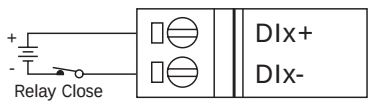
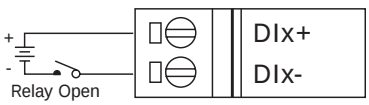
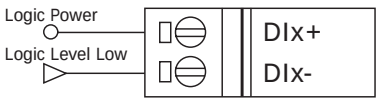
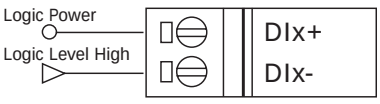
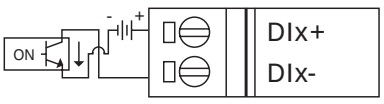
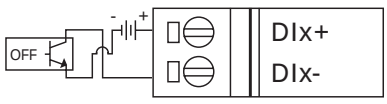
Ordering Information

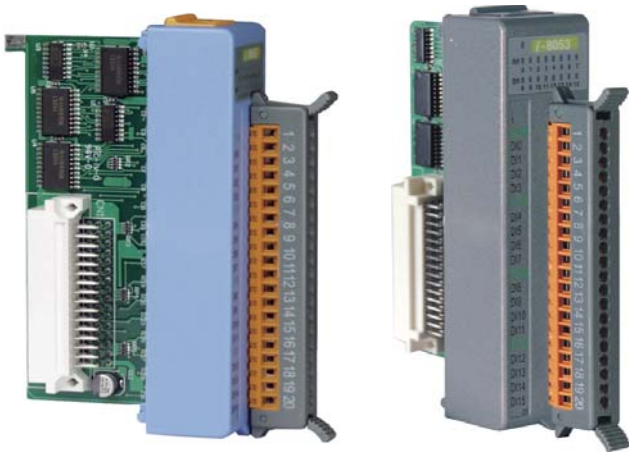
i-8052 CR	8-channel Isolated Digital Input Module (Blue Cover) (RoHS)
i-8052-G CR	8-channel Isolated Digital Input Module (Gray Cover) (RoHS)

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-8053
i-8053(G)

16-channel Isolated Digital Input Module

RoHS

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

CE FC

Specifications

■ 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	

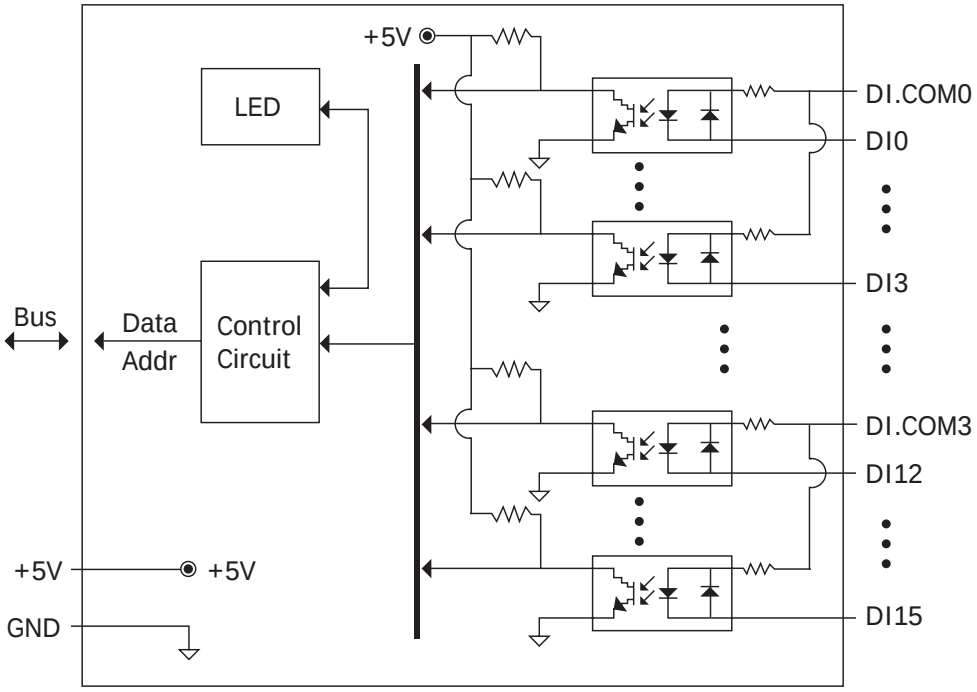
Pin Assignment

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

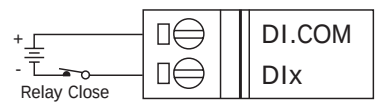
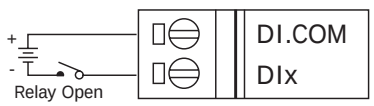
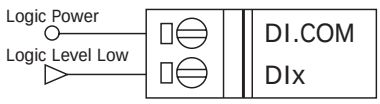
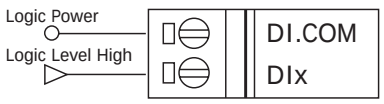
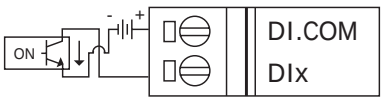
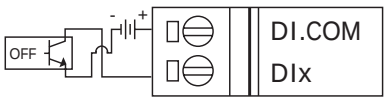
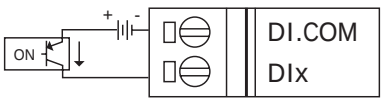
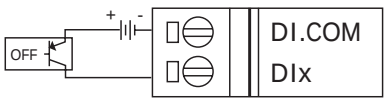
Ordering Information

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
		

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

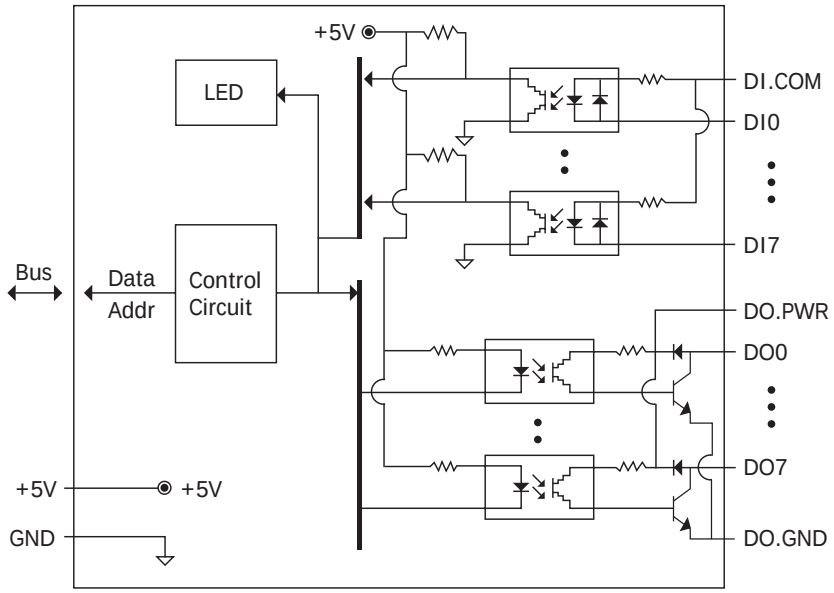
Specifications

■ 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)

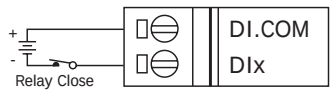
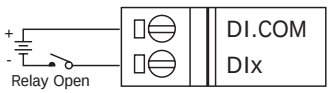
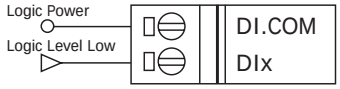
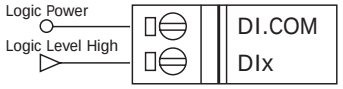
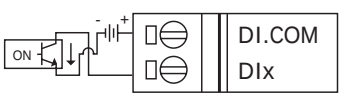
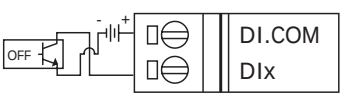
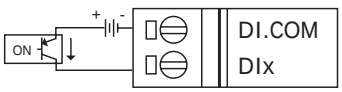
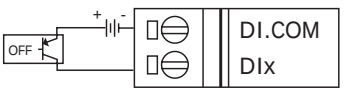
Internal I/O Structure



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	DO0
11	DO1
12	DO2
13	DO3
14	DO4
15	DO5
16	DO6
17	DO7
18	DO.GND
19	DO.GND
20	DO.PWR

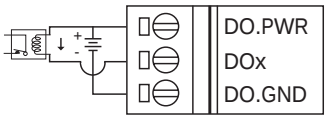
Wire Connection

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

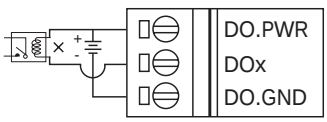
Drive Relay

ON State LED ON Readback as 1



Relay ON

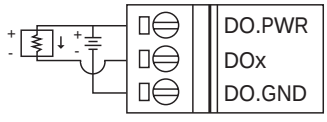
OFF State LED OFF Readback as 0



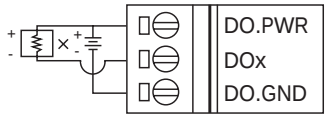
Relay Off

Resistance Load

ON State LED ON Readback as 1



OFF State LED OFF Readback as 0



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

■ 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

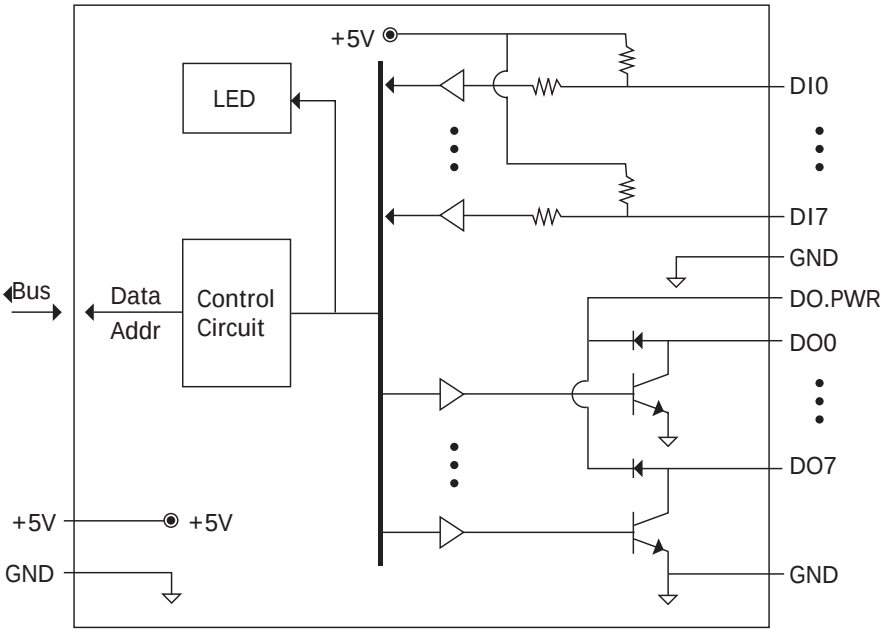
Pin Assignment

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

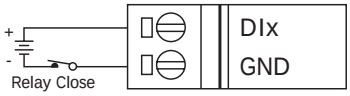
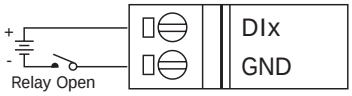
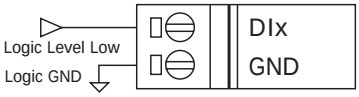
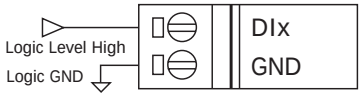
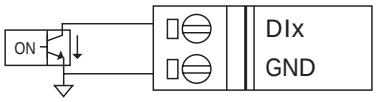
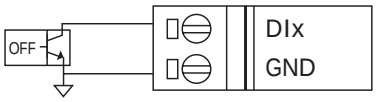
Ordering Information

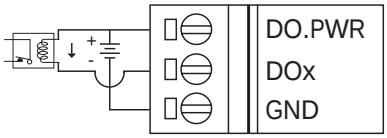
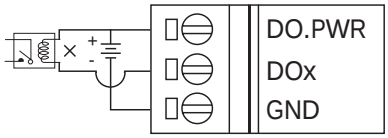
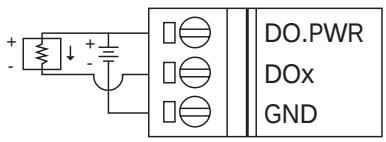
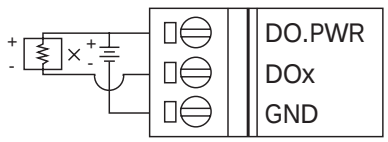
i-8055 CR	16-channel Non-isolated digital I/O Module (Blue Cover) (RoHS)
i-8055-G CR	16-channel Non-isolated digital I/O Module (Gray Cover) (RoHS)

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		

Digital Output Modules

16-channel Non-isolated Open Collector Output Module

i-8056
i-8056(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	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	

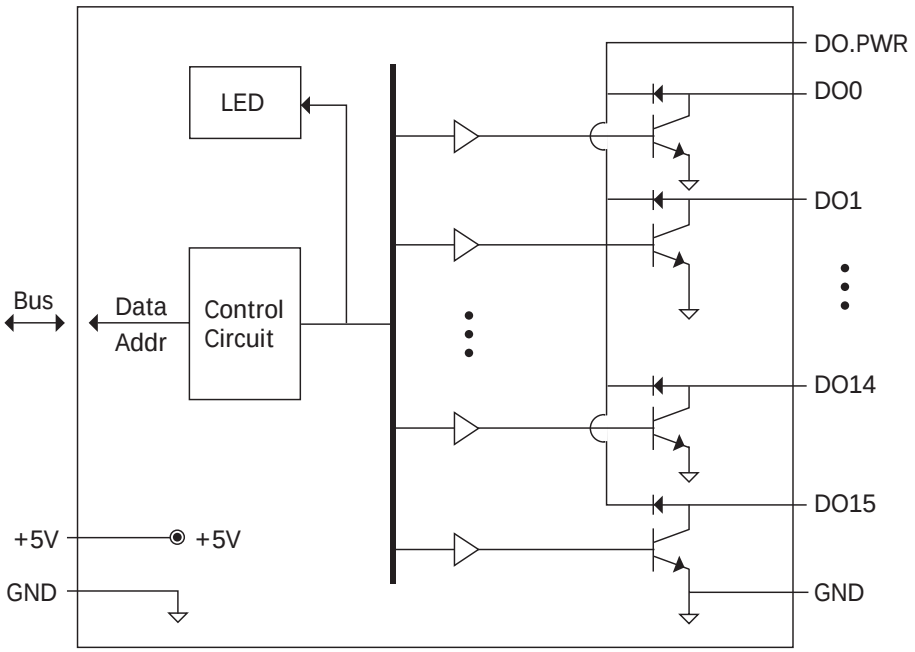
Pin Assignment

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

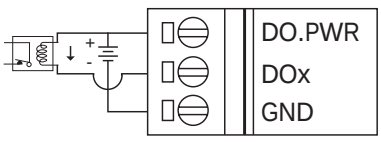
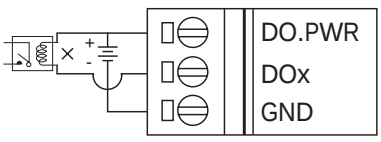
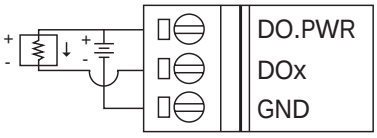
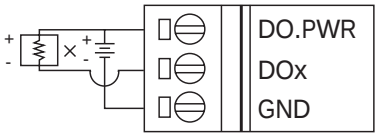
Ordering Information

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		
Resistance Load		

Digital Output Modules

16-channel Isolated Open Collector Output Module

i-8057
i-8057(G)

Description

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

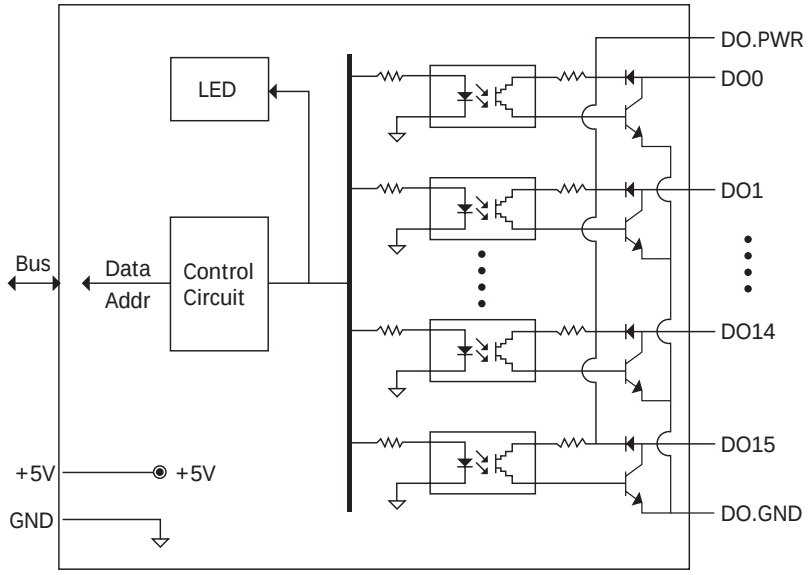
Specifications

Digital Output	
Output channels	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)

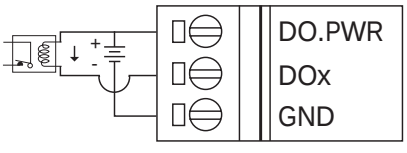
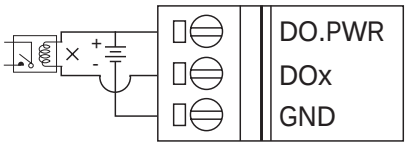
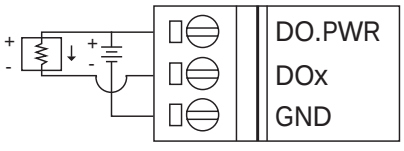
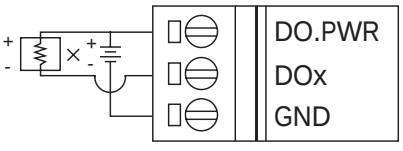
Internal I/O Structure



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		

8-channel Isolated Digital Input Module

Description

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

i-8058
i-8058(G)

Specifications

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	

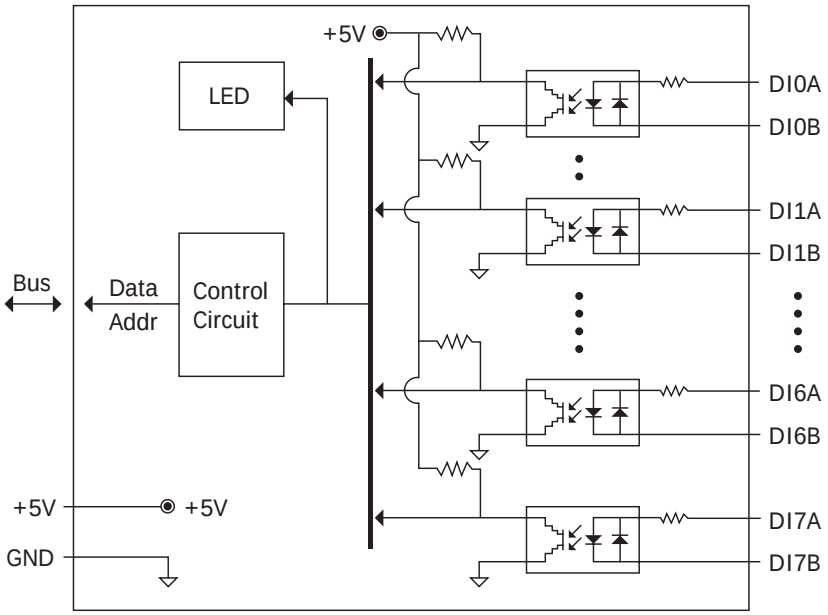
Pin Assignment

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

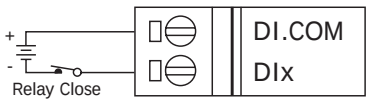
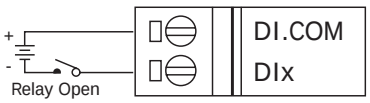
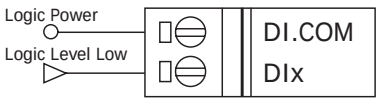
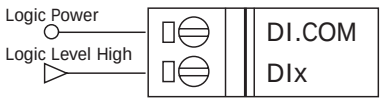
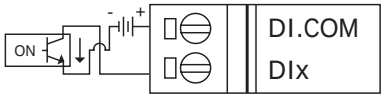
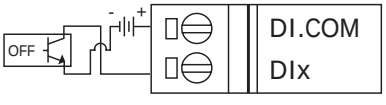
Ordering Information

i-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-8060
i-8060(G)

6-channel 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	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	

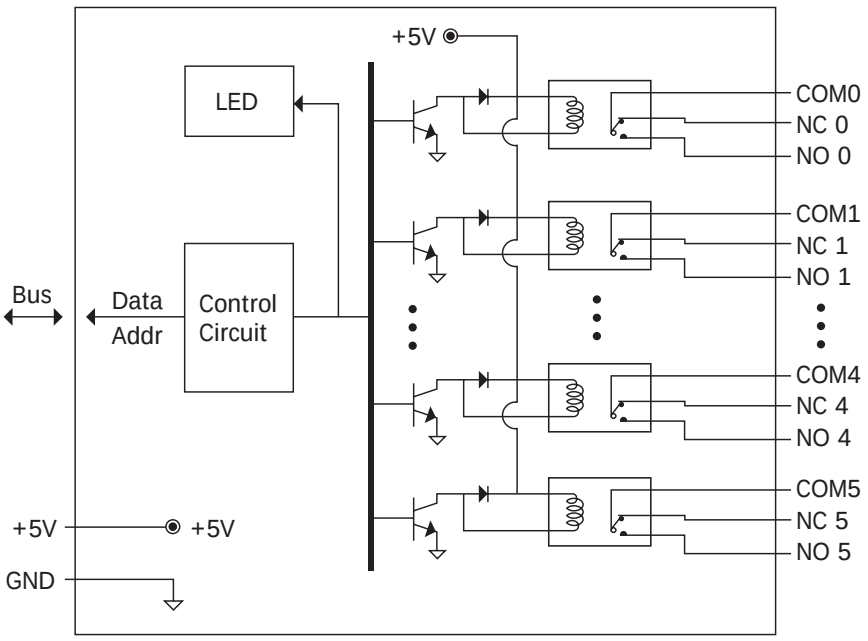
Pin Assignment

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	-

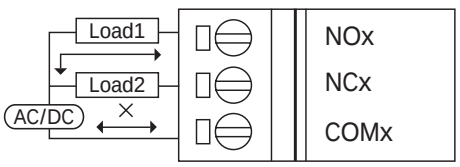
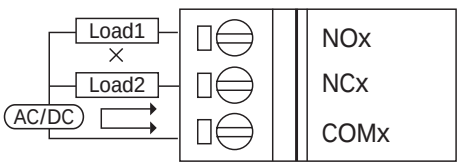
Ordering Information

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

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		

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	

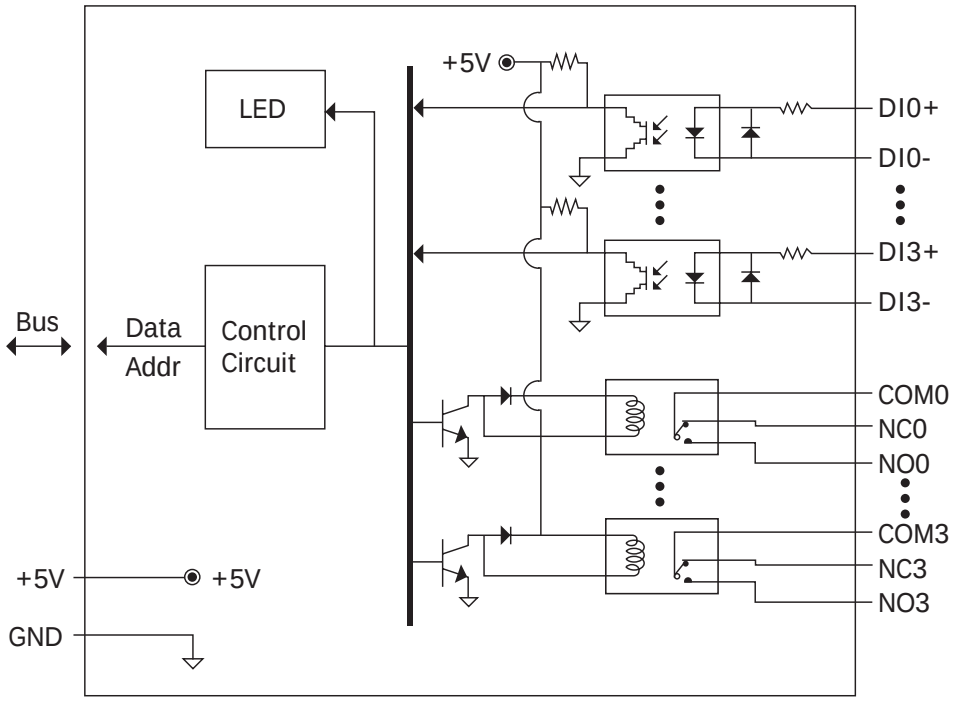
Pin Assignment

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

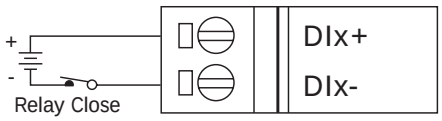
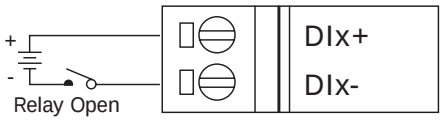
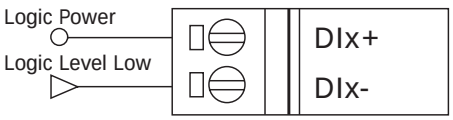
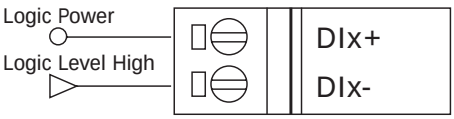
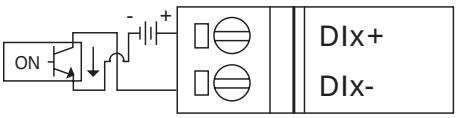
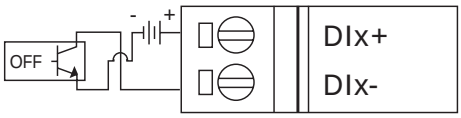
Ordering Information

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		

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

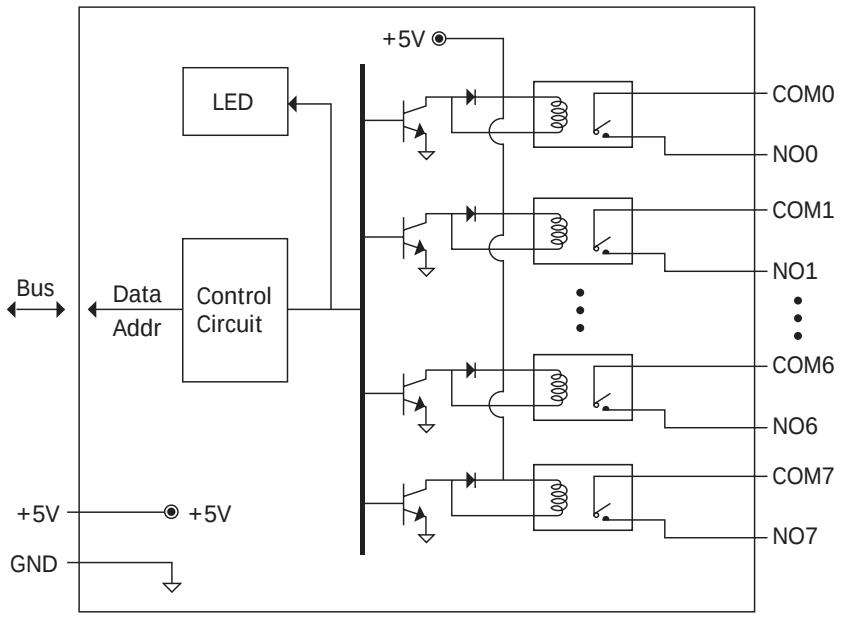
Specifications

■ 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.
		Max. release time	3 ms Max.
Output type	Power Relay, Form A (Normal Open)	**Surge strength**	4000V (at 1.2*50us)
Relay contact voltage range	0~ 250VAC (47Hz ~ 63Hz) 0~ 30VDC	**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)	■ LED Display	
		1 LED as Power Indicator 8 LEDs as Power Relay Indicators	
		■ Power Consumption	
Insulation resistance	Min. 1,000M Ohms, at 500VDC	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)

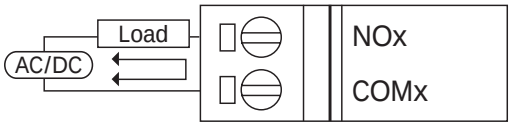
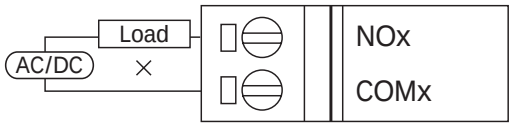
Internal I/O Structure



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		

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	

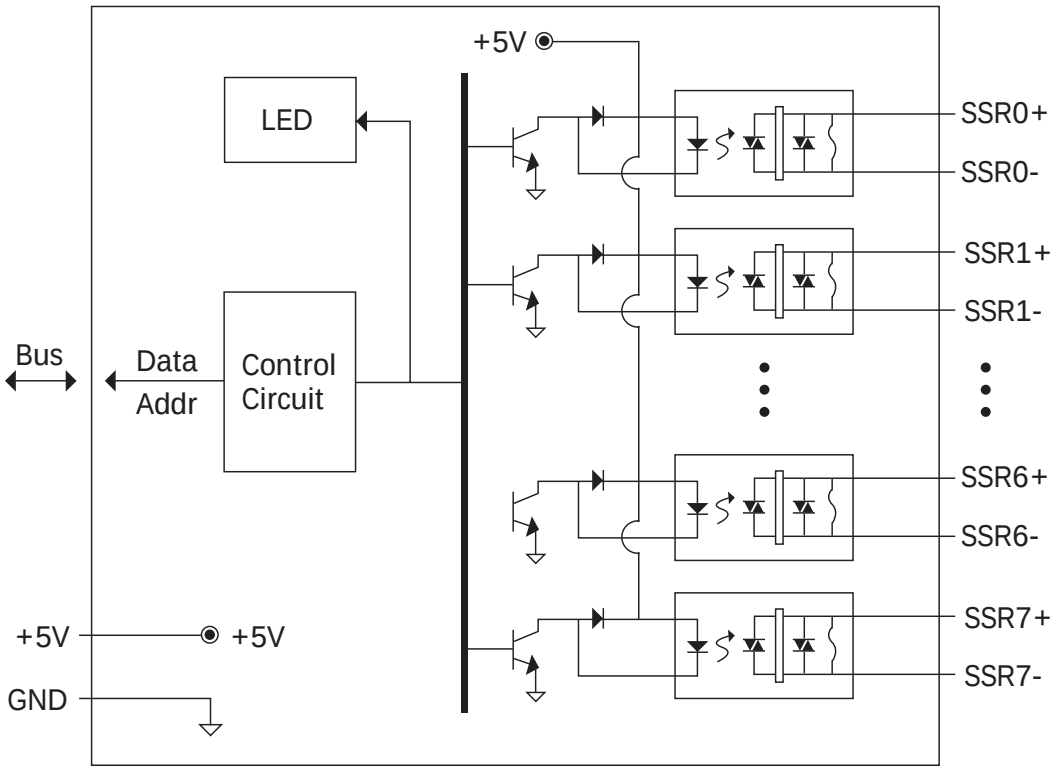
Pin Assignment

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	-

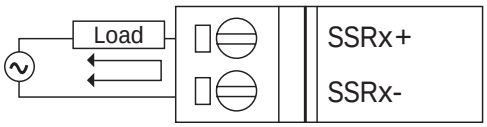
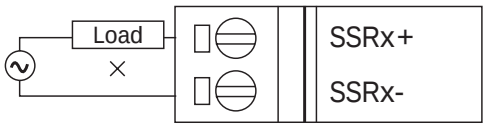
Ordering Information

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-8066
i-8066(G)

8-channel SSR-DC Output Module

Description

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

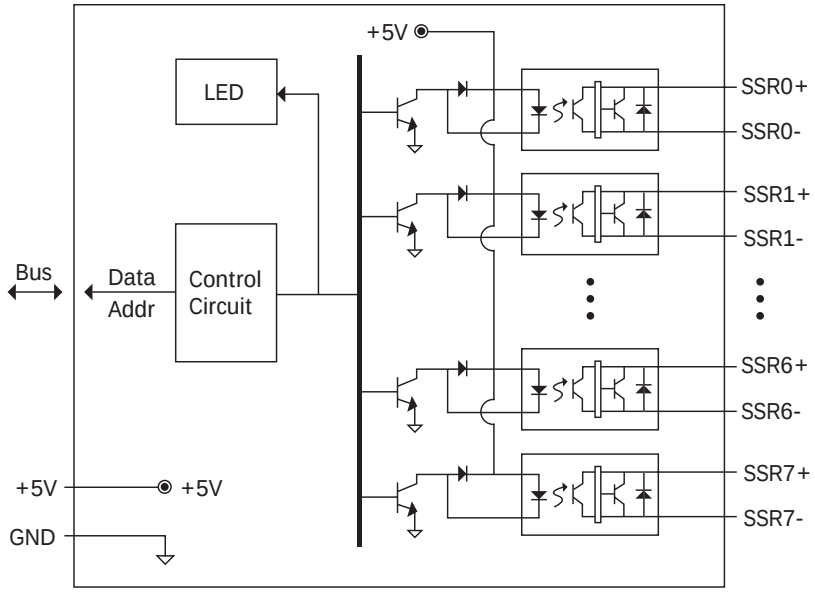
Specifications

Digital Output	
Output channels	8
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)

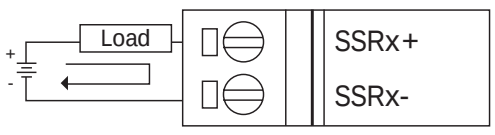
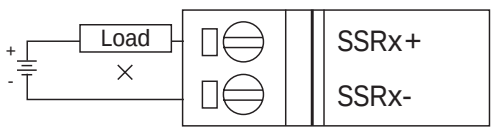
Internal I/O Structure



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		

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	

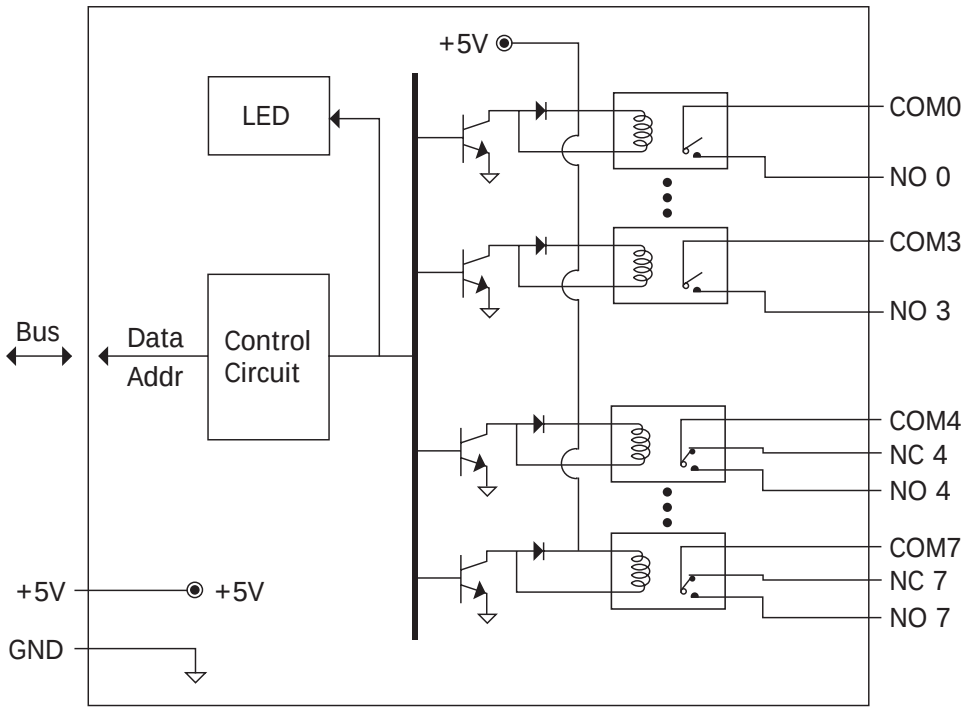
Pin Assignment

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

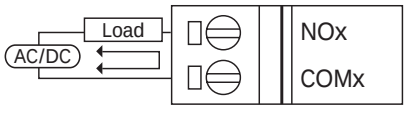
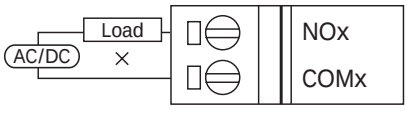
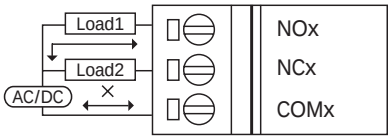
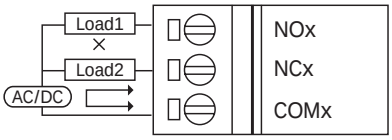
Ordering Information

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		

Digital Output Modules

8-channel Photo MOS Relay Output Module

i-8069
i-8069(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)
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	

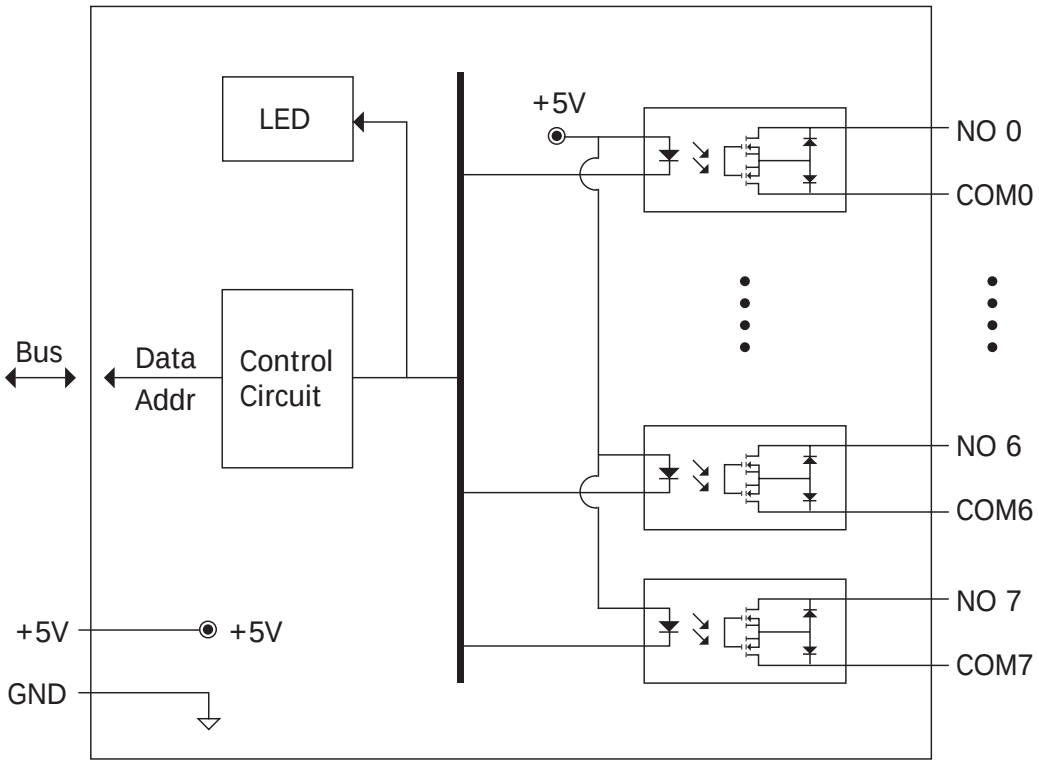
Pin Assignment

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

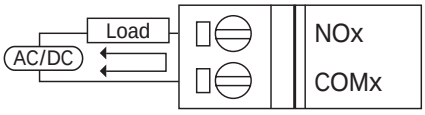
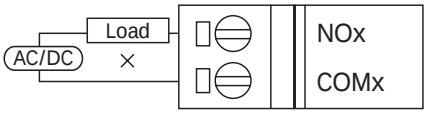
Ordering Information

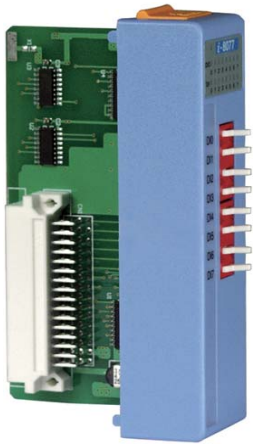
i-8069	8-channel Photo MOS Relay Output Module (Blue Cover)
i-8069-G	8-channel Photo MOS Relay Output Module (Gray Cover)

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		



16-channel Digital I/O Simulator Module

RoHS

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)

CE FC

Functional Description

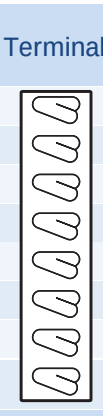
The i-8077 Digital Input/Output Simulator Module are designed to be an aid to program development. Use the i-8077 to simulator real world inputs/outputs during your design and debug process.

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)

i-8080
i-8080(G)

Description

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

4/8-channel Counter/Frequency Module

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

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	

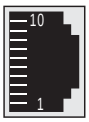
Ordering Information

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

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	

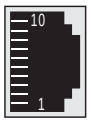
Ordering Information

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

Communication Modules

2-port RS-422/485 Module

i-8142
i-8142(G)

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	

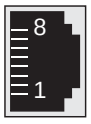
Ordering Information

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

i-8142i
i-8142i(G)

2-port Isolated RS-422/485 Module

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

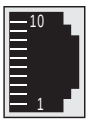
Ordering Information

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	

Communication Modules

4-port RS-422/485 Module

RoHS

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

i-8144
i-8144(G)

CE FC

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

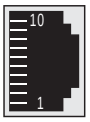
Ordering Information

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	

2-port FRnet module

Description

- Used to expand FRnet ports

i-8172
i-8172(G)

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 controlers. 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-channelisolated 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.

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

i-8090
i-8090(G)

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

Pin Assignment

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

25-Pin Female D-Sub Connector

Ordering Information

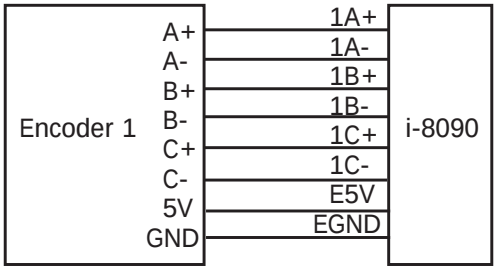
i-8090	3-axis Encoder Module
Standard Pack	i-8090 x 1, User's Manual x1, CA-PC25M x 1

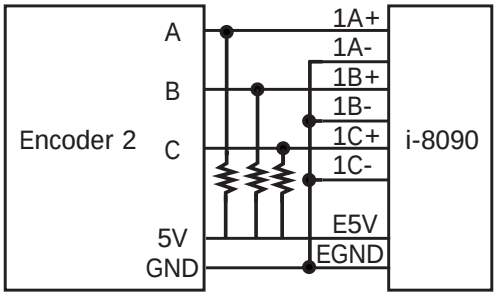
Optional Accessories

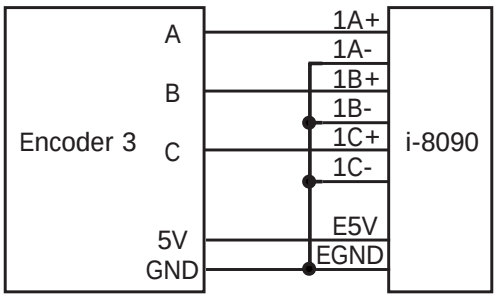
DN-25	I/O Connector Block with DIN-Rail Moun ting, 25/9 pin D-sub Connector
CA-2520	25-pin Male-Male D-sub flat cable, 2M

DN-25+CA-2520

Wire Connection







Note:

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

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

- 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.		Terminal No.	Name
+5V	01	○ ○	14	+5V
CW_PULSE1	02	○ ○	15	CW_PULSE2
CCW_DIR1	03	○ ○	16	CCW_DIR2
HOLD1	04	○ ○	17	HOLD2
GND	05	○ ○	18	GND
EXT_VCC	06	○ ○	19	EXT_VCC
/ORG1	07	○ ○	20	/ORG2
/LS11	08	○ ○	21	/LS21
NO USE	09	○ ○	22	NO USE
NOUSE	10	○ ○	23	NOUSE
/LS14	11	○ ○	24	/LS24
/EMG	12	○ ○	25	EXT_GND
EXT_GND	13	○		

25-Pin Female D-Sub Connector

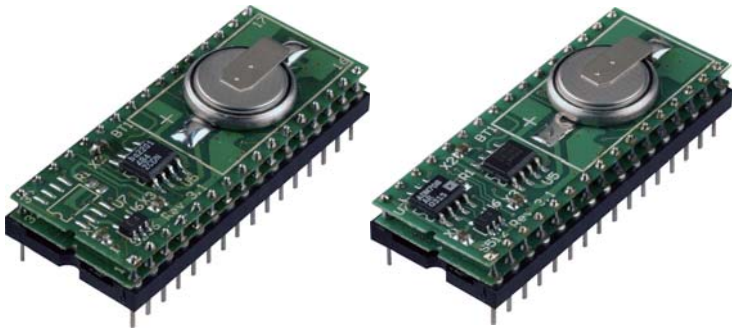
Ordering Information

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 Moun ting, 25/9 pin D-sub Connector
CA-2520	25-pin Male-Male D-sub flat cable, 2M

DN-25+CA-2520



S256
S512

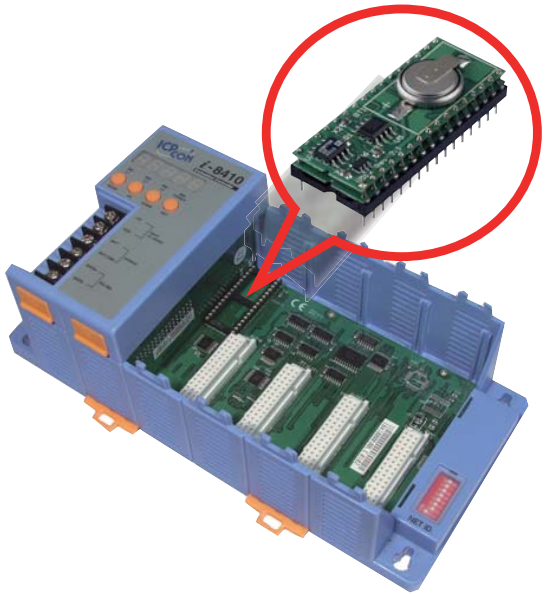
256/512K battery backup SRAM Module for all i-8000 Embedded Controller

Description

- Battery backup SRAM module

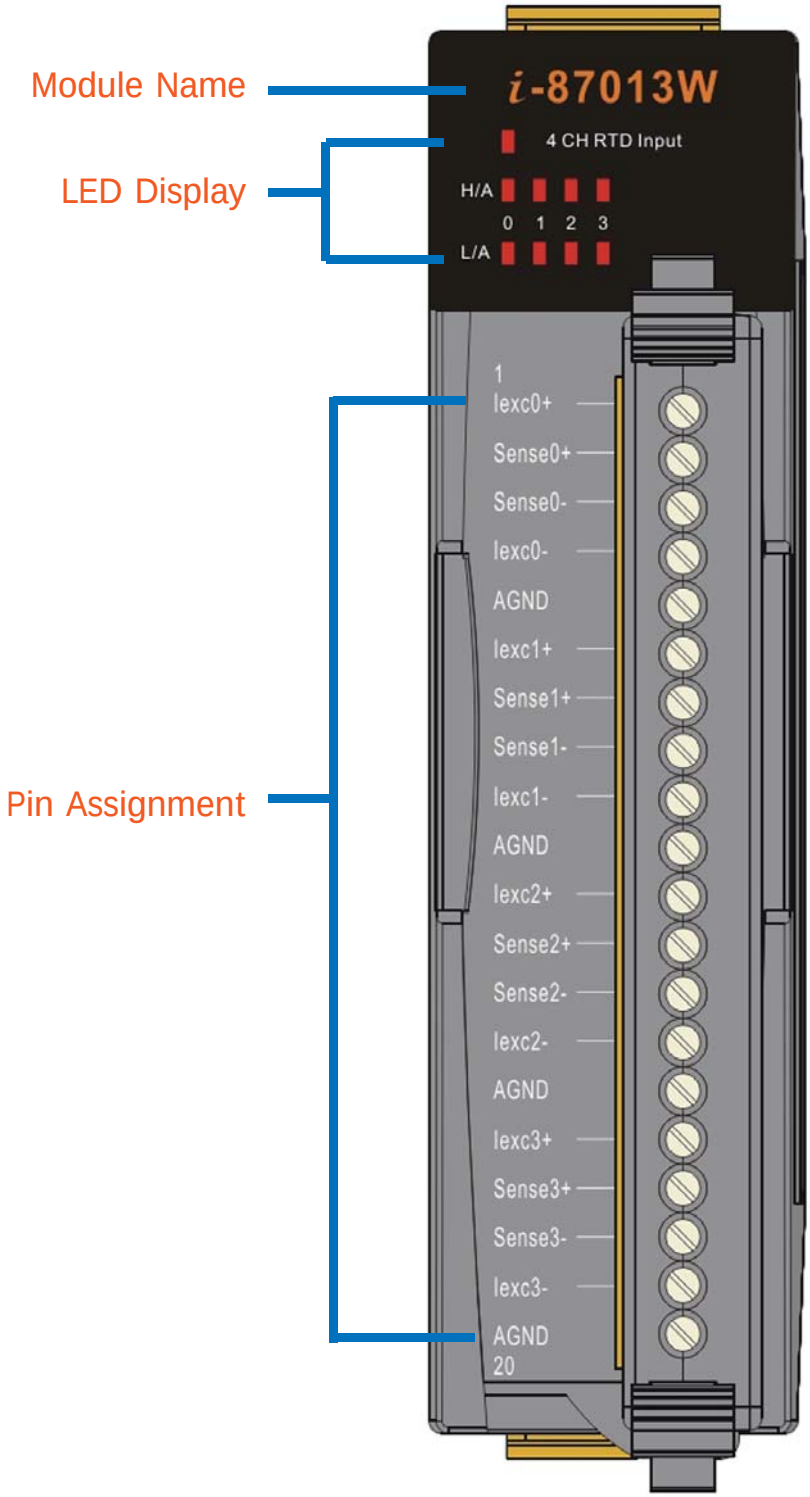
Specifications

- **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


Module Name
LED Display
Pin Assignment
i-87013W
4 CH RTD Input
H/A
0 1 2 3
L/A
1
Iexc0+
Sense0+
Sense0-
Iexc0-
AGND
Iexc1+
Sense1+
Sense1-
Iexc1-
AGND
Iexc2+
Sense2+
Sense2-
Iexc2-
AGND
Iexc3+
Sense3+
Sense3-
Iexc3-
AGND
20

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.	+1 Max.	+3.5V~30V
		OFF	+1 Max.	+3.5V~30V	+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	Dry : GND Wet : +68V~150V	80~250VAC	10~80 VAC
		OFF	Dry : Open Wet : +3.5V max	Dry : Open Wet : +48V 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	+1V Max	+3.5V~30V
		OFF	+1 Max.	+3.5V~30V	+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

4-channel RTD Input Module

RoHS

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

i-87013W

CE FC

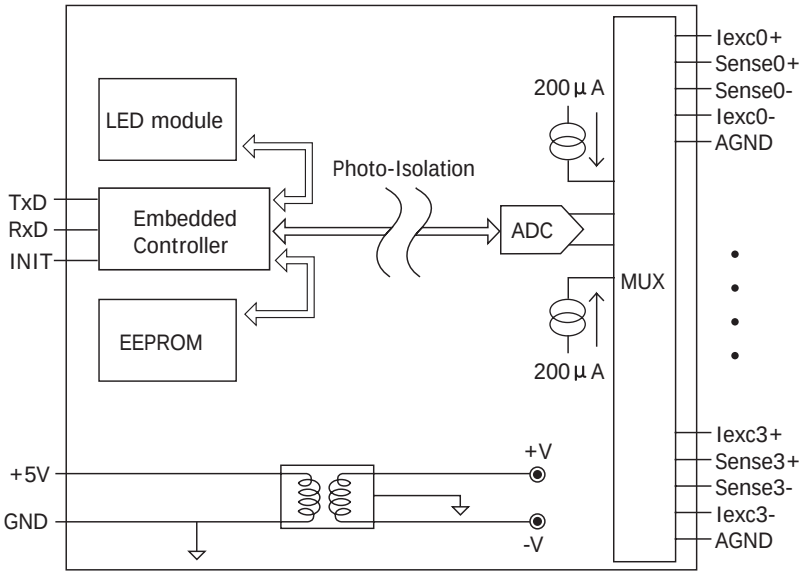
Specifications

■ 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 μV/ °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
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	Iexc0+
02	Sense0+
03	Sense0-
04	Iexc0-
05	AGND
06	Iexc1+
07	Sense1+
08	Sense1-
09	Iexc1-
10	AGND
11	Iexc2+
12	Sense2+
13	Sense2-
14	Iexc2-
15	AGND
16	Iexc3+
17	Sense3+
18	Sense3-
19	Iexc3-
20	AGND

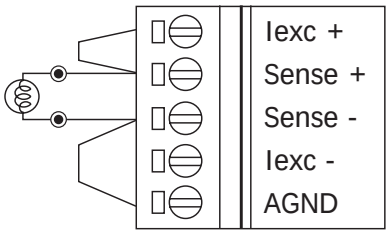
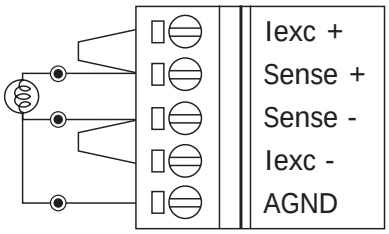
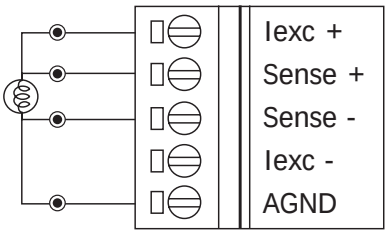
Internal I/O Structure



RTD Temprature Range

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

Wire Connection

2-Wire-RTD-Connection	3-Wire-RTD-Connection	4-Wire-RTD-Connection
		

Ordering Information

i-87013W-G CR	4-channel RTD Input Module (RoHS)

Analog Input - RTD

7-channel RTD Input Module

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

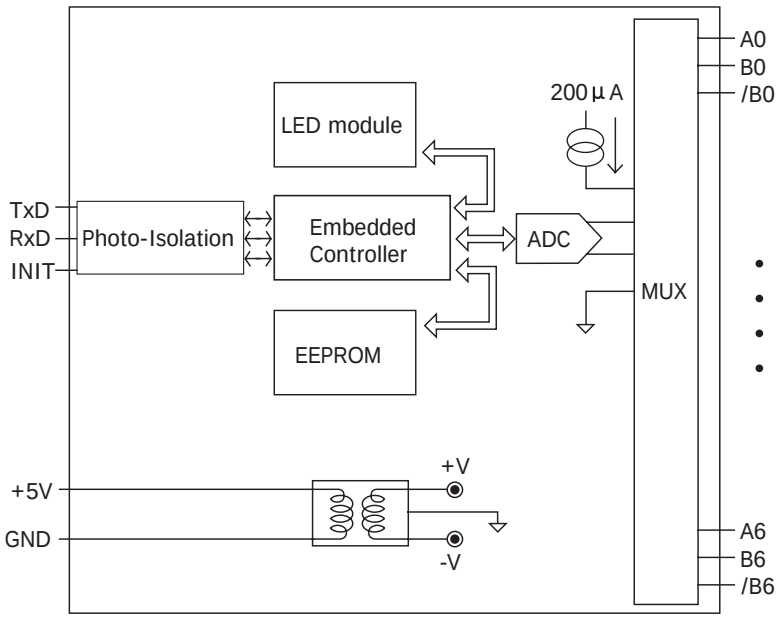
■ Analog Input	
Input channels	7 Differential
Input type	Pt100, Pt1000, Ni120, Cu100, Cu1000
Resolution	16-bit
Sampling rate	12 Samples/ sec (Total)
Input impedance	>1M Ohms
Accuracy	+/- 0.05% of FSR
Span drift	+/- 20 μV/ °C
Zero drift	+/- 0.5 μV/ °C
Normal mode rejection	100 dB
Common mode rejection	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
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

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

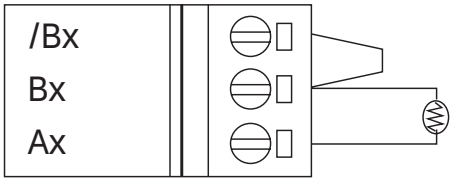
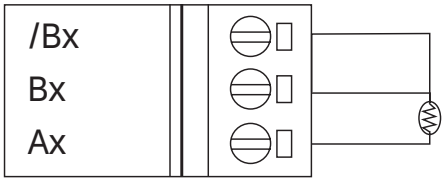
Internal I/O Structure



RTD Temprature Range

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

Wire Connection

2-Wire-RTD-Connection	3-Wire-RTD-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

i-87015P

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

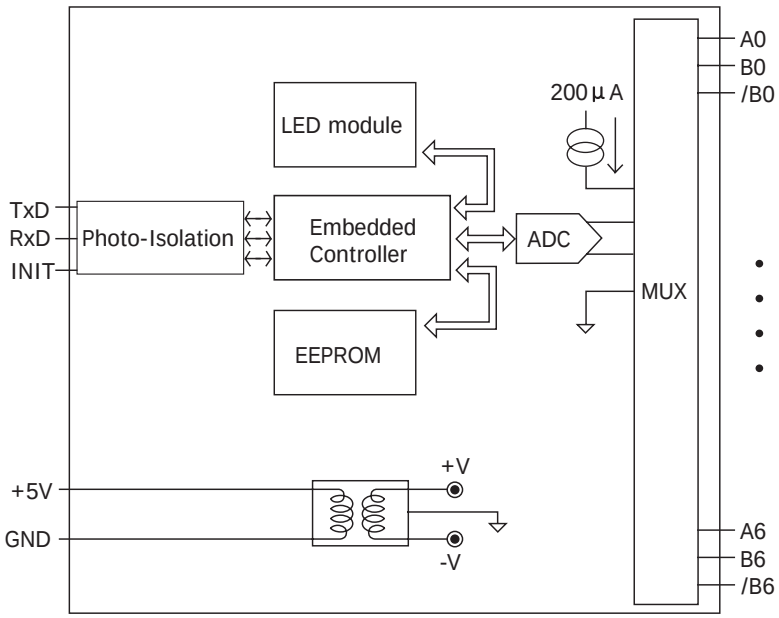
Specifications

■ 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

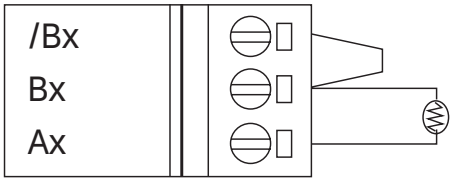
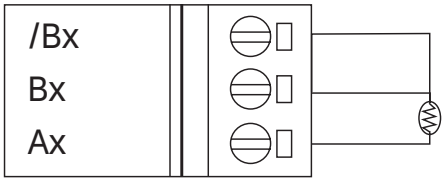
Internal I/O Structure



RTD Temprature Range

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

Wire Connection

2-Wire-RTD-Connection	3-Wire-RTD-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

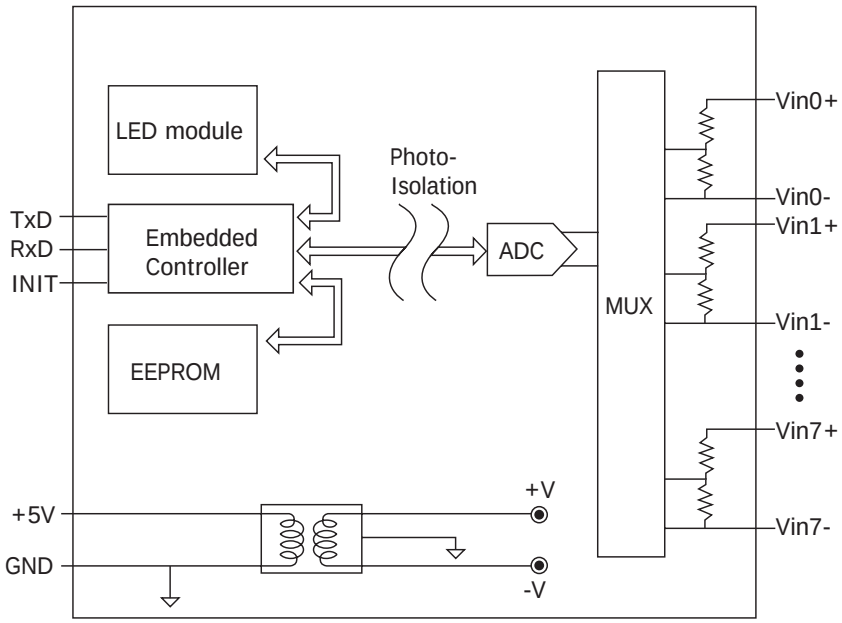
Specifications

■ 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		**■ Power**	
1 LED as Power/ Communication Indicator		**Power consumption**	Maximum : 1.3W

Ordering Information

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

Internal I/O Structure

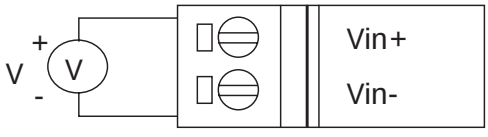


Pin Assignment

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

High Voltage Input Wiring



TYPE	SIGNAL
1B	±150V
1C	±50V

i-87K AI Modules

Analog Input

8-channel Analog Input Module
with High Over Voltage Protection

i-87017R

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

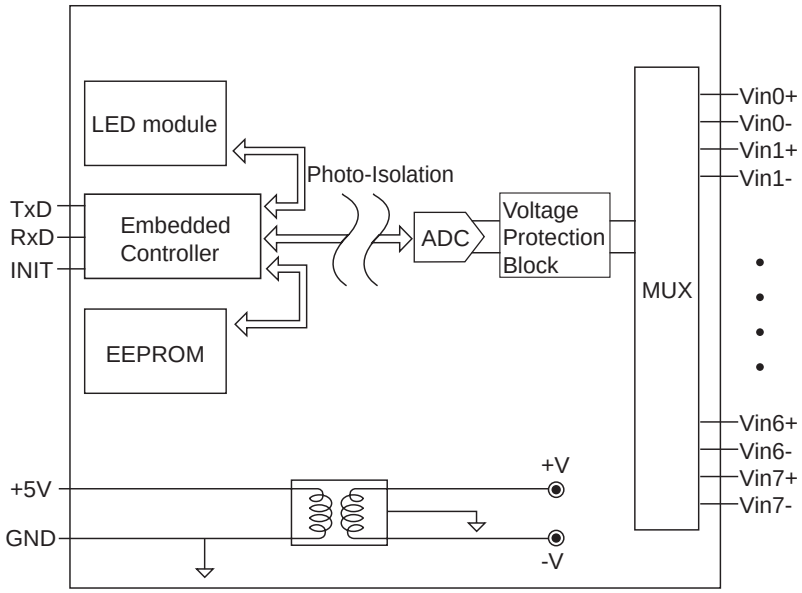
■ Analog Input			
Input channels	8 Differential	**Over voltage protection**	240Vrms
Input type	+/- 10V, +/- 5V, +/- 1V, +/- 500mV, +/- 150mV, -20mA ~ +20mA	**Resolution**	Normal Mode : 16-bit, Fast Mode : 12-bit
Sampling rate	Normal Mode : 10 Samples/ sec (Total) Fast Mode : 60 Sample/ sec (Total)	**Accuracy**	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

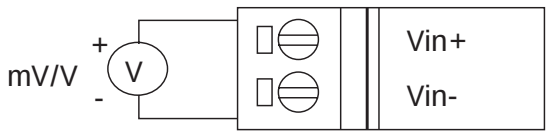


Pin Assignment

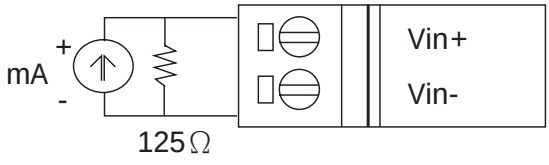
Terminal No.	Pin Assignment Name
01	Vin0+
02	Vin0-
03	Vin1+
04	Vin1-
05	Vin2+
06	Vin2-
07	Vin3+
08	Vin3-
09	Vin4+
10	Vin4-
11	Vin5+
12	Vin5-
13	Vin6+
14	Vin6-
15	Vin7+
16	Vin7-

Wire Connection

Voltage Input Wiring



Current Input Wiring



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.

Analog Input

i-87017RC

8-channel Current Input Module

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

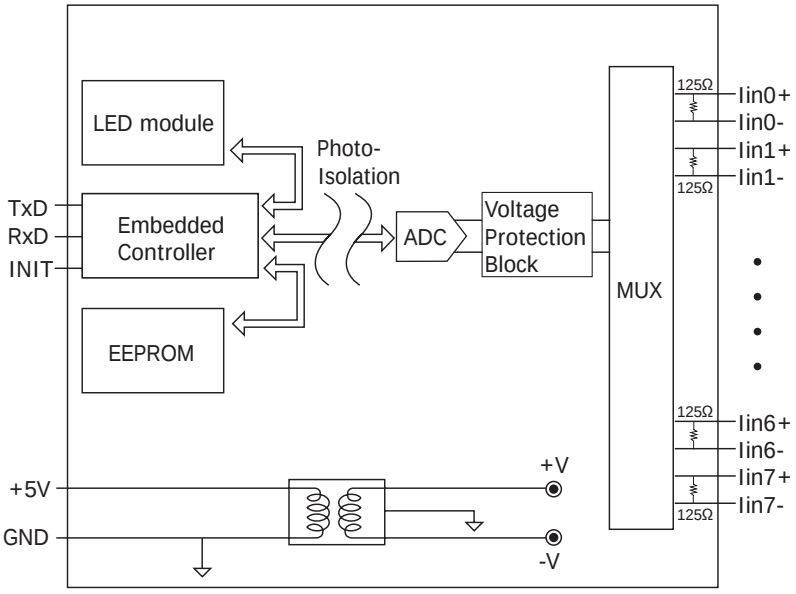
Specifications

■ 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		**■ Power**	
1 LED as Power/ Communication Indicator 16 LEDs as High/ Low Alarm Signals		**Power consumption**	Maximum : 1.3W

Ordering Information

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

Internal I/O Structure

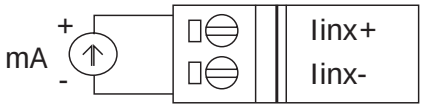


Pin Assignment

Terminal No.		Pin Assignment Name
	01	Iin0+
	02	Iin0-
	03	Iin1+
	04	Iin1-
	05	Iin2+
	06	Iin2-
	07	Iin3+
	08	Iin3-
	09	Iin4+
	10	Iin4-
	11	Iin5+
	12	Iin5-
	13	Iin6+
	14	Iin6-
	15	Iin7+
	16	Iin7-

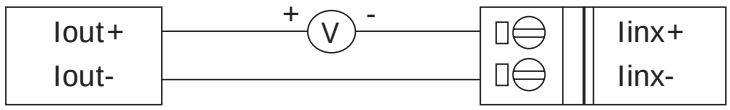
Wire Connection

Wiring for current input

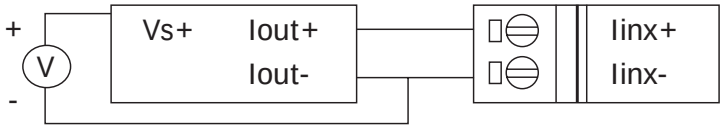


Wiring for transmitter input

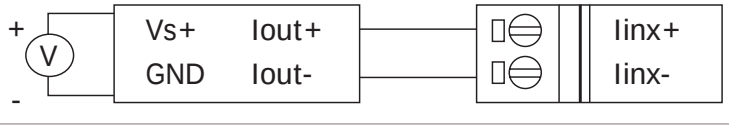
2-Wire



3-Wire



4-Wire



TYPE	0D	07	1A
SIGNAL	±20mA	+4~+20mA	0~+20mA

Analog Input

8-channel Thermocouple Input Module
High Over Voltage Protection

RoHS

i-87018R

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

CE FC

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			

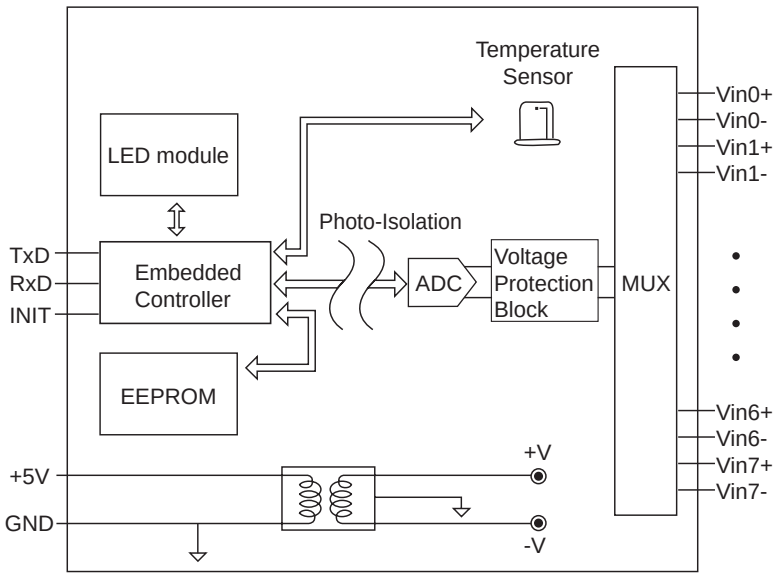
■ LED Display	■ Power	
1 LED as Power/ Communication Indicator 16 LEDs as High/ Low Alarm Signals	**Power consumption**	Maximum : 1.2W

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

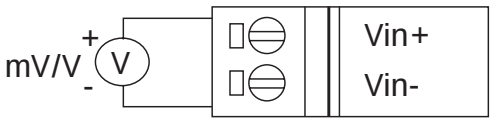


Pin Assignment

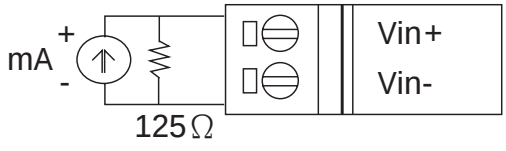
Terminal No.		Pin Assignment Name
	01	Vin0+
	02	Vin0-
	03	Vin1+
	04	Vin1-
	05	Vin2+
	06	Vin2-
	07	Vin3+
	08	Vin3-
	09	Vin4+
	10	Vin4-
	11	Vin5+
	12	Vin5-
	13	Vin6+
	14	Vin6-
	15	Vin7+
	16	Vin7-

Wire Connection

Voltage Input Wiring

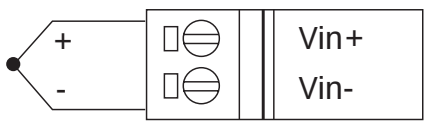


Current Input Wiring



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

Thermocouple Input Wiring



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-87018Z connects DB-1820 directly

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

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

10-channel Thermocouple Input Module
High Over Voltage Protection

RoHS

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

CE FC

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		**■ Power**	
1 LED as Power/ Communication Indicator		**Power consumption**	1.3W

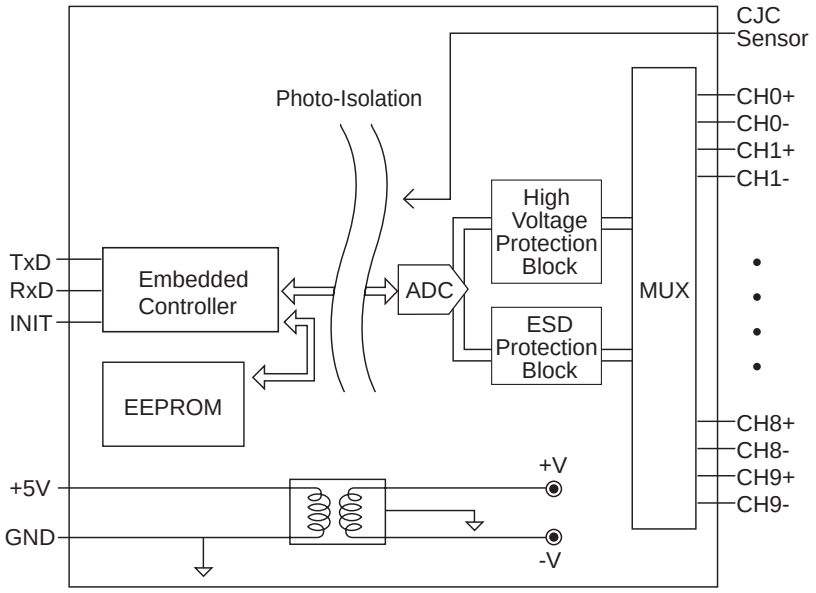
Ordering Information

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



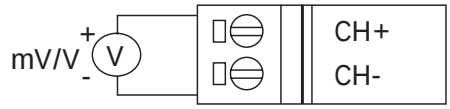
Pin Assignment For i-87018Z

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.

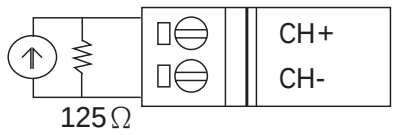
25-Pin Female D-Sub Connector

Wire Connection

Voltage Input Wiring

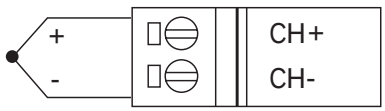


Current Input Wiring



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

Thermocouple Input Wiring



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

Pin Assignment For DB-1820

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-87019R

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

RoHS

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

CE FC

Specifications

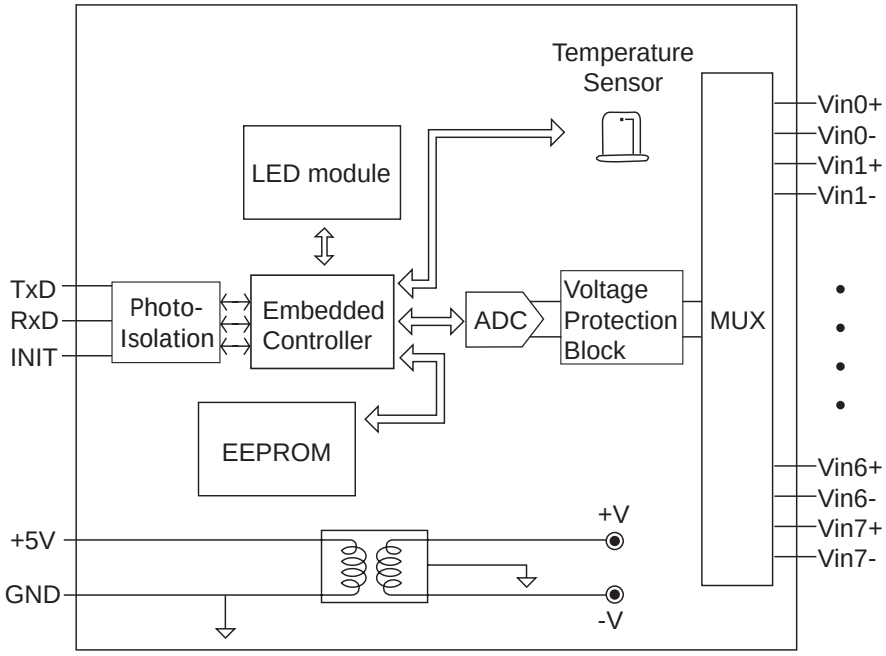
■ Analog Input			
Input channels	8 Differential	**Resolution**	16-bit
Input type	+/- 15mV, +/- 50mV, +/- 100mV, +/- 150mV, +/- 500mV, +/- 1V, +/- 2.5V, +/- 5V,+/- 10V -20mA ~ +20mA (Jumper Selectable) Thermocouple (J, K, T, E. R. S, B, N, C, L, M, LDIN43710)		
Sampling rate	8 Samples/ sec (Total)	**Over 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

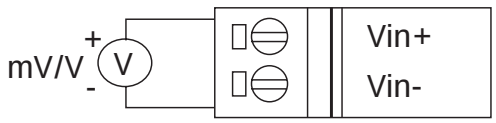


Pin Assignment

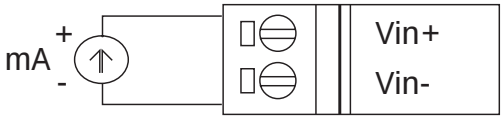
Terminal No.	Pin Assignment Name
01	Vin0+
02	Vin0-
03	Vin1+
04	Vin1-
05	Vin2+
06	Vin2-
07	Vin3+
08	Vin3-
09	Vin4+
10	Vin4-
11	Vin5+
12	Vin5-
13	Vin6+
14	Vin6-
15	Vin7+
16	Vin7-

Wire Connection

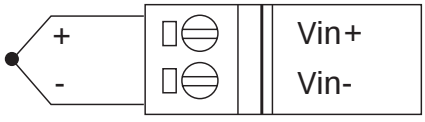
Voltage Input Wiring



Current Input Wiring



Thermocouple Input Wiring



Thermocouple 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-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

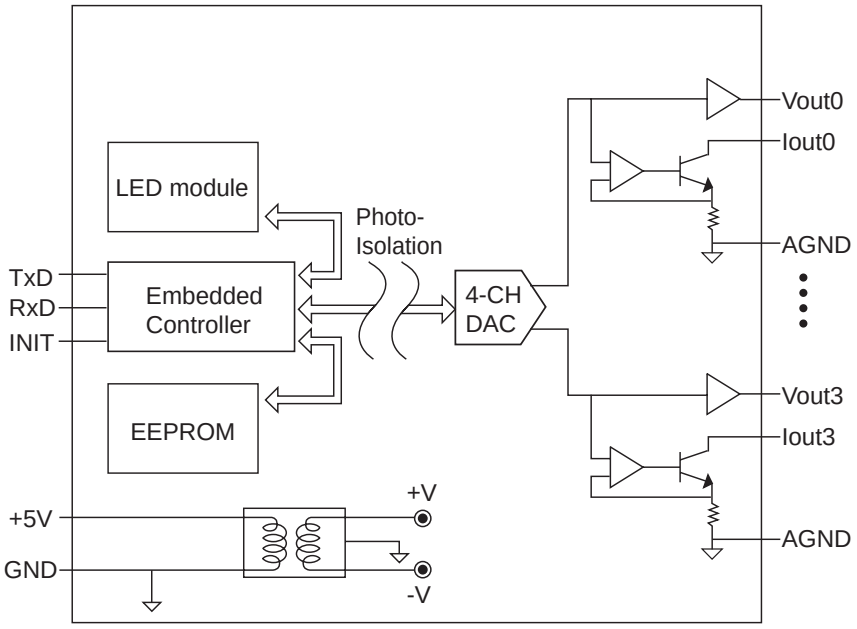
■ Analog Output			
Output channels	4	**Resolution**	14-bit
Output type	0 ~ +5V, +/- 5V, 0 ~ +10V, +/- 10V, 0 ~ +20mA, +4 ~ +20mA	**Programmable output slope**	0.125 to 2048 mA/ second 0.0625 to 1024 V/ second
Zero drift	Voltage: +/-30μV/ °C Current: +/-0.2μA/ °C	**Voltage output capability**	10V@20mA
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	■ Power Consumption
1 LED as Power/ Communication Indicator	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

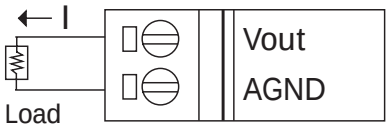


Pin Assignment

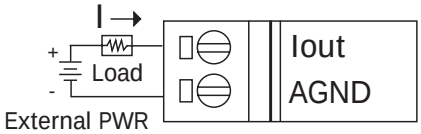
Terminal No.	Pin Assignment Name
01	Iout0
02	AGND
03	Iout1
04	AGND
05	Iout2
06	AGND
07	Iout3
08	AGND
09	Vout0
10	AGND
11	Vout1
12	AGND
13	Vout2
14	AGND
15	Vout3
16	AGND

Wire Connection

Voltage Output Wiring



Current Output Wiring



i-87K DI Modules

Digital Input

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

i-87040W

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

Specifications

Digital Input

Input channels	32 (Sink/ source)	**Counters**	Channels: 32 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms
Input type	Isolation, One Common for All Digital Inputs		
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

1 LED as Power/ Communication Indicator
32 LEDs as Digital Output Indicators

Power

Power consumption	0.7W

Optional Accessories

DN-37-A	I/O Connector Block with DIN-Rail Moun ting and 37-pin D-sub Connector (pitch:5.08mm)
DN-37-381-A	I/O Connector Block with DIN-Rail Moun ting 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	

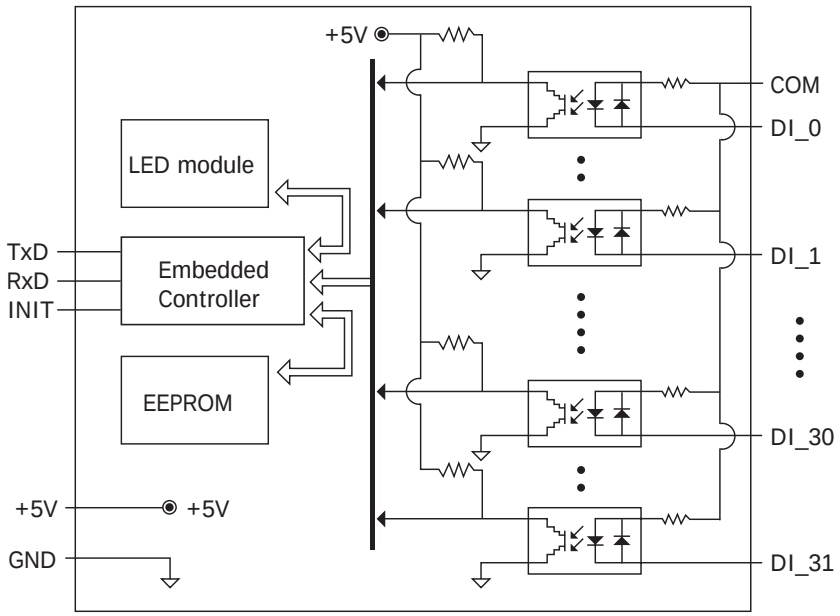
i-8040/ 41/ 42 and i-87040W/ 41W with DN-37-381-A

FR-Series modules

Ordering Information

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

Internal I/O Structure

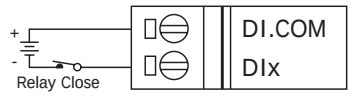
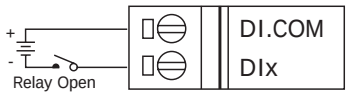
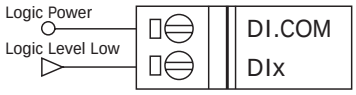
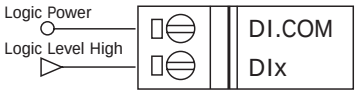
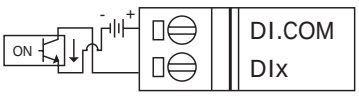
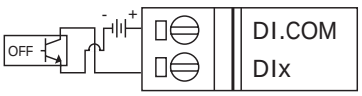
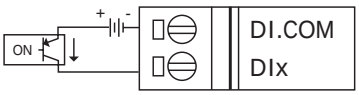
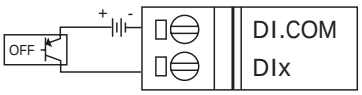


Pin Assignment

Pin Assignment Name	Terminal No.		Pin Assignment Name
COM	19	37	COM
NC	18	36	NC
NC	17	35	DI_31
DI_15	16	34	DI_30
DI_14	15	33	DI_29
DI_13	14	32	DI_28
DI_12	13	31	DI_27
DI_11	12	30	DI_26
DI_10	11	29	DI_25
DI_9	10	28	DI_24
DI_8	09	27	DI_23
DI_7	08	26	DI_22
DI_6	07	25	DI_21
DI_5	06	24	DI_20
DI_4	05	23	DI_19
DI_3	04	22	DI_18
DI_2	03	21	DI_17
DI_1	02	20	DI_16
DI_0	01		

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

Digital Input

16-channel Non-Isolated Digital Input Module for Long Distance Measurement with 16-bit Counters

i-87046W

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

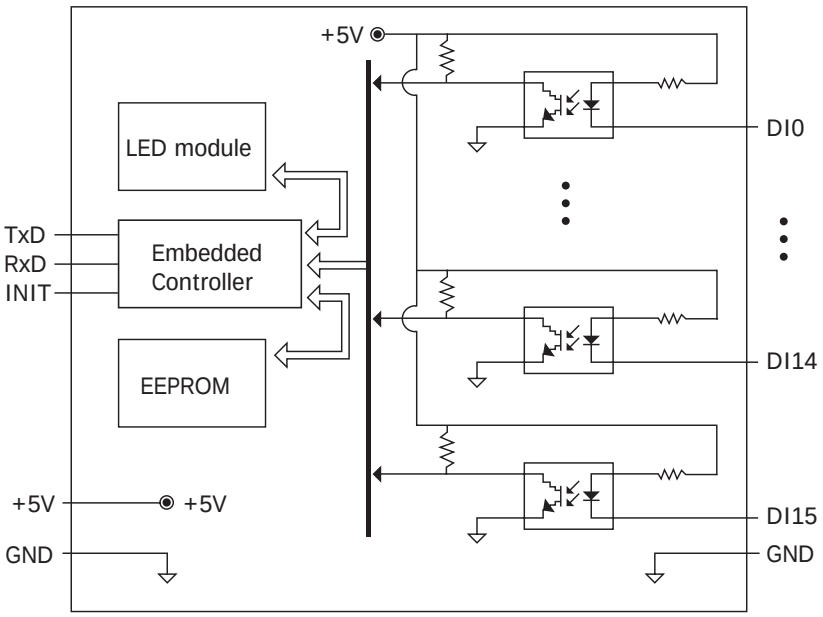
■ Digital Input			
Input channels	16 (Sink)	**Counters**	Channels: 16 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms
ESD protection	±4kV Contact Discharge and ±8kV Air Discharge		
EFT protection	4KV for Power Line and 1KV for RS-485	**Input type**	Non-isolated
On voltage 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)

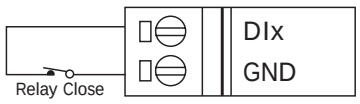
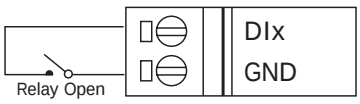
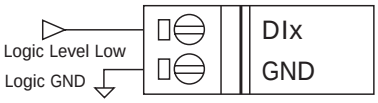
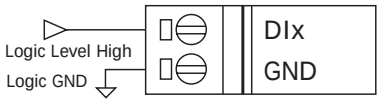
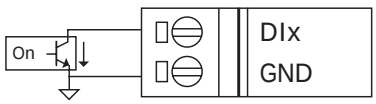
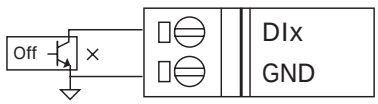
Internal I/O Structure



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

Digital Input

16-channel Non-isolation Digital Input Module with 16-bit

i-87051W

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

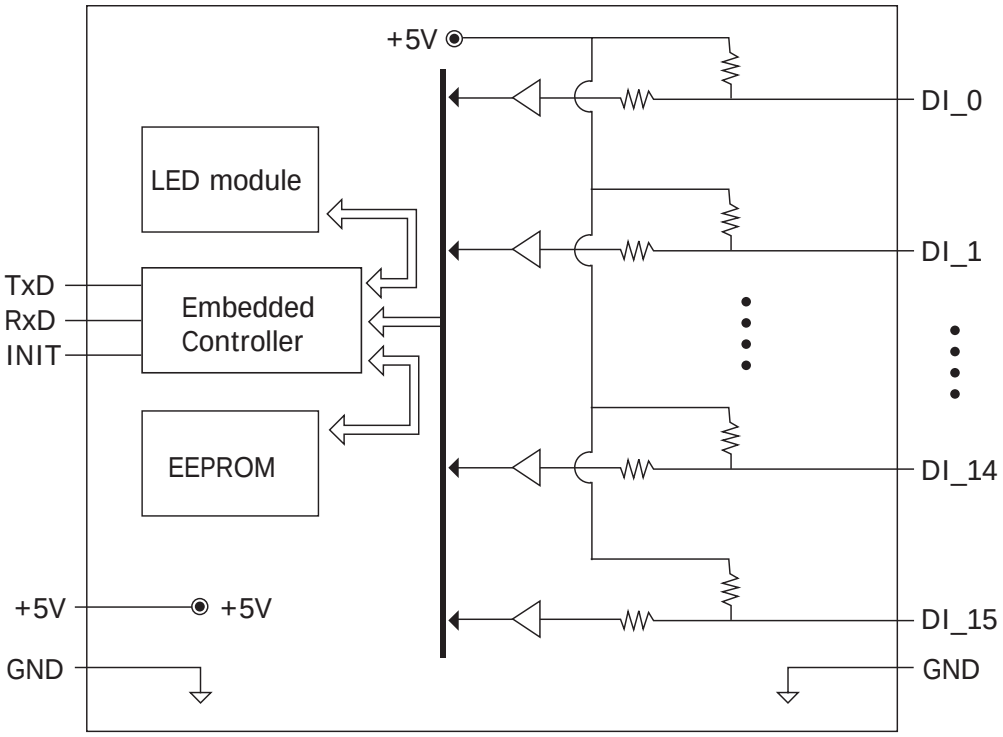
Pin Assignment

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

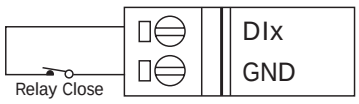
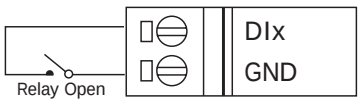
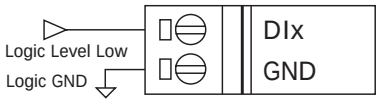
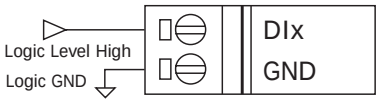
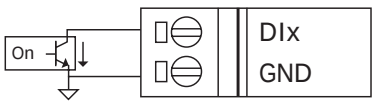
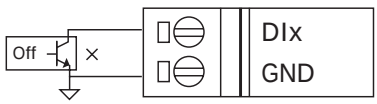
Ordering Information

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

Digital Input

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

i-87052W

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	

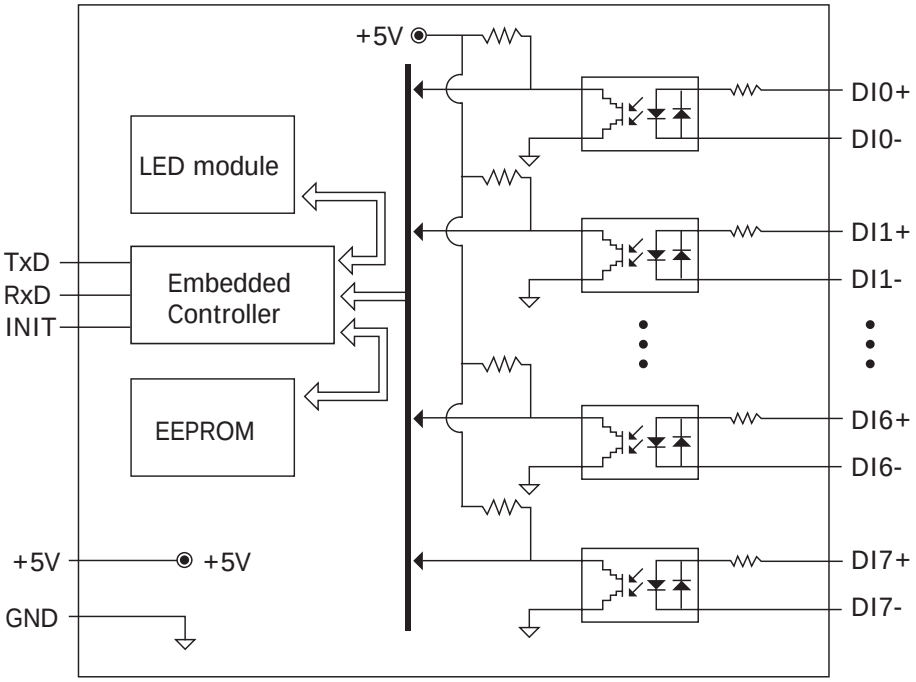
Pin Assignment

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-

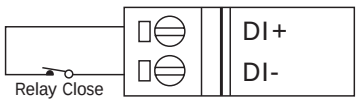
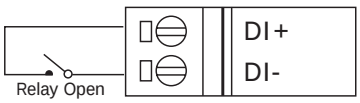
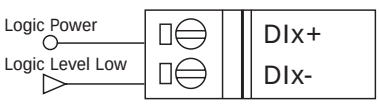
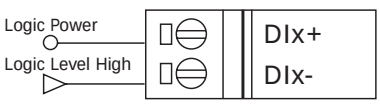
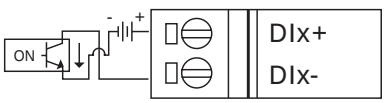
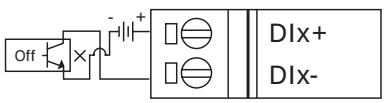
Ordering Information

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

Digital Input

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

i-87053W

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.

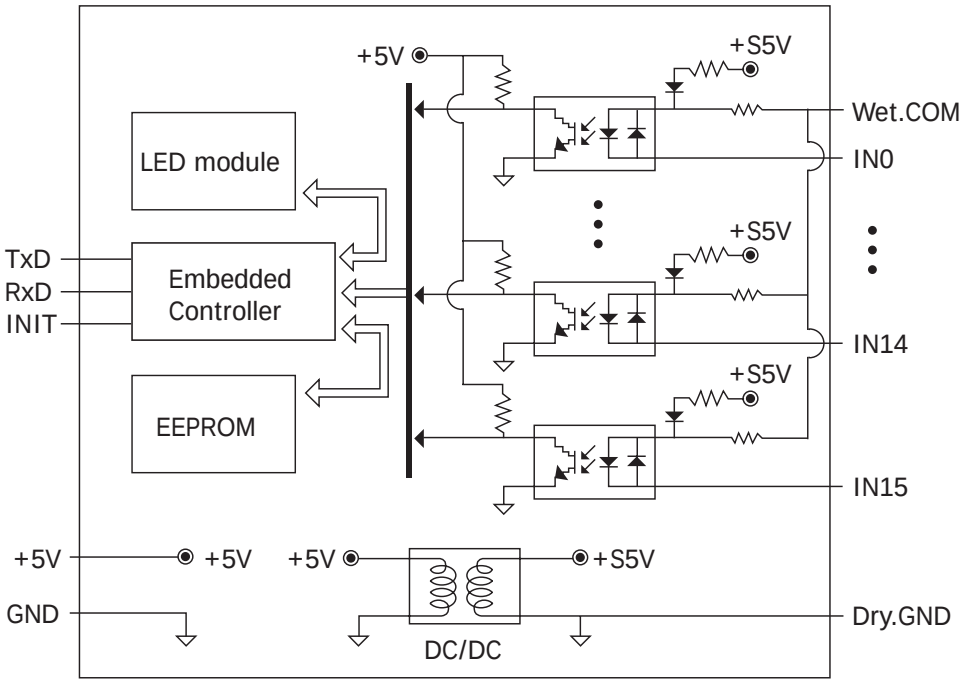
Pin Assignment

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

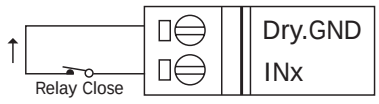
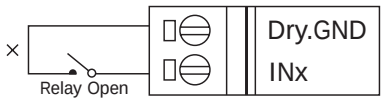
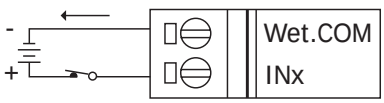
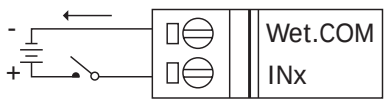
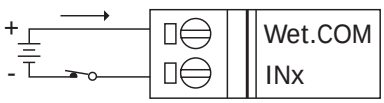
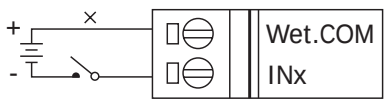
Ordering Information

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

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

i-87053W-A5

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

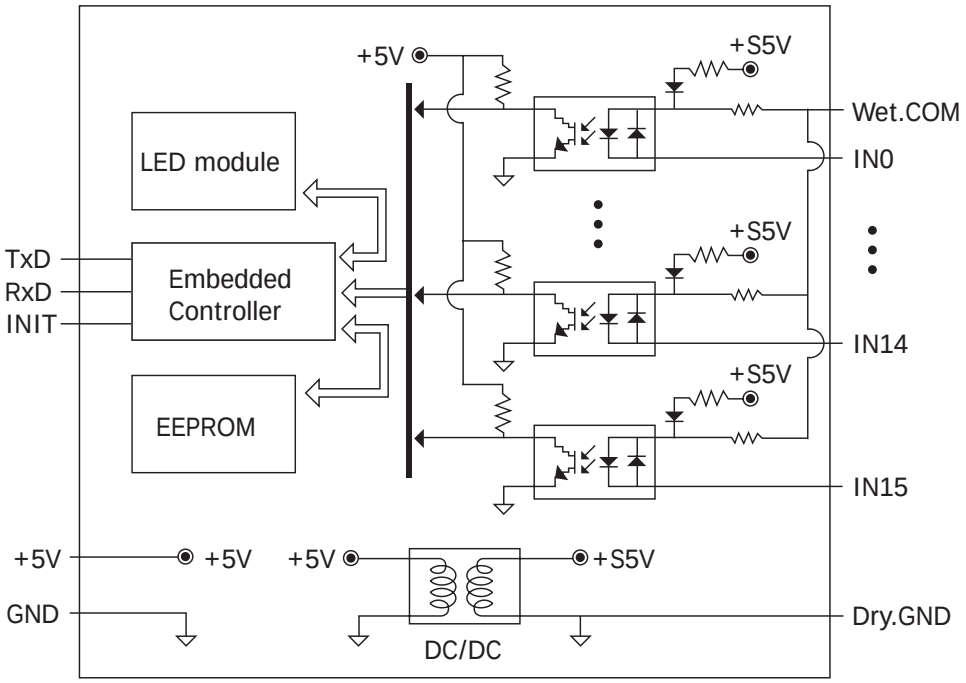
Pin Assignment

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

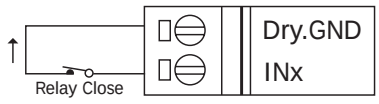
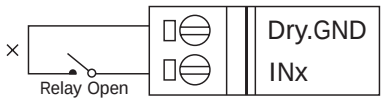
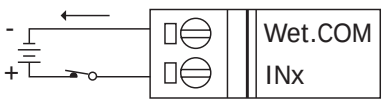
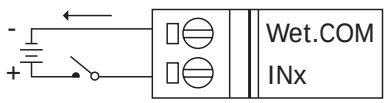
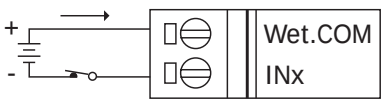
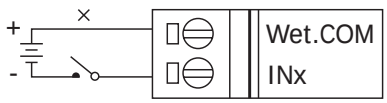
Ordering Information

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

AC Digital Input

8-channel 80-250VAC **Isolated** Digital Input Module with 16-bit Counters

i-87058W

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

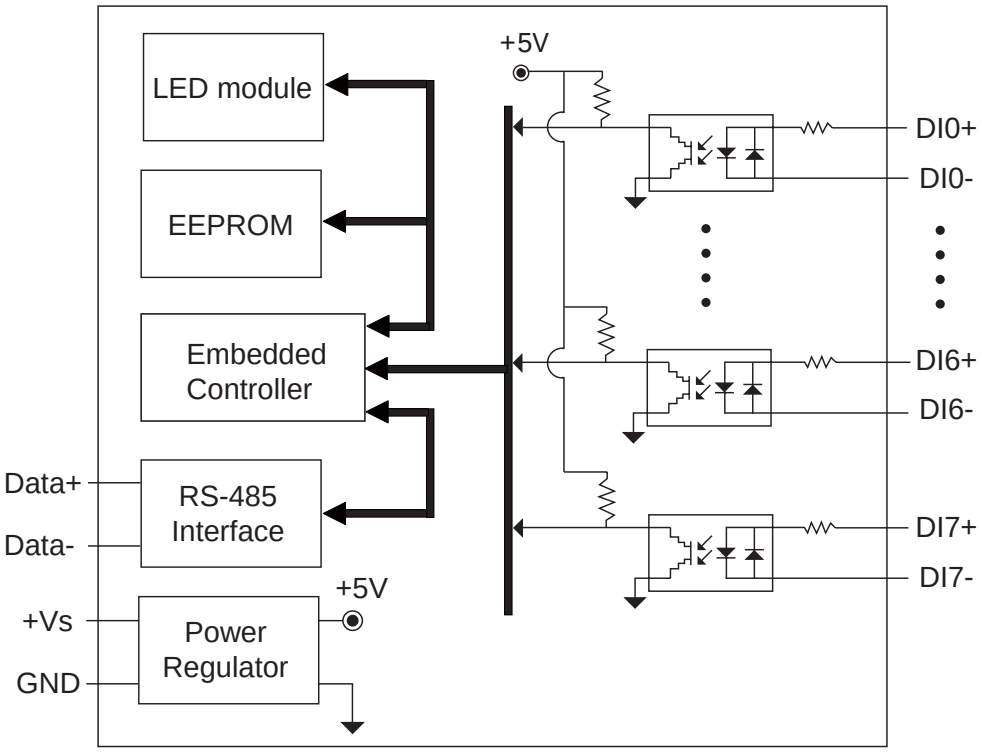
Pin Assignment

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

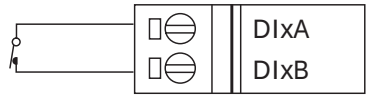
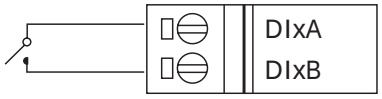
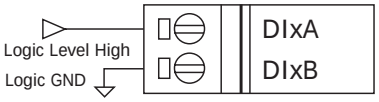
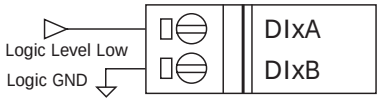
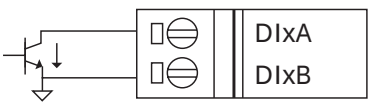
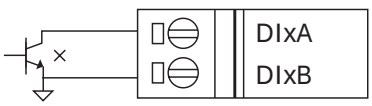
Ordering Information

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 **>** **80**V	Voltage **<** **20**V
		
Open Collector	Open Collector On	Open Collector Off
		

i-87K DI Modules

AC Digital Input

8-channel 10-80VAC Isolated Digital Input Module with 16-bit Counters

i-87059W

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

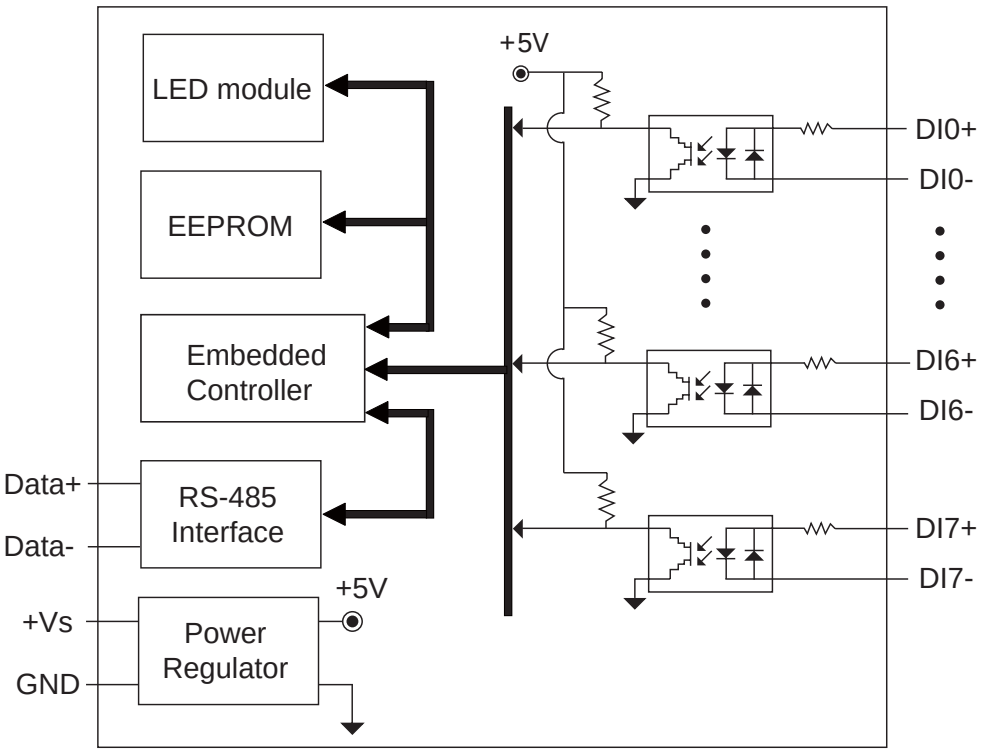
Pin Assignment

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

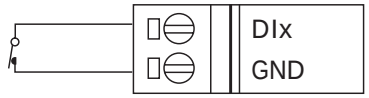
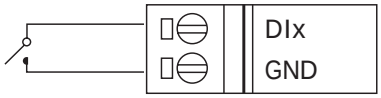
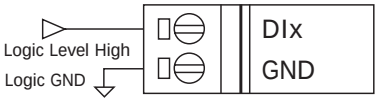
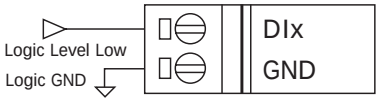
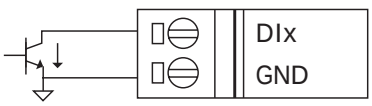
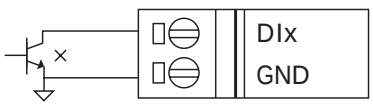
Ordering Information

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 **<** **10**V	Voltage **>** **3**V
		
Open Collector	Open Collector On	Open Collector Off
		

i-87K DI & DO Modules

Digital Input & Output

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

i-87054W

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

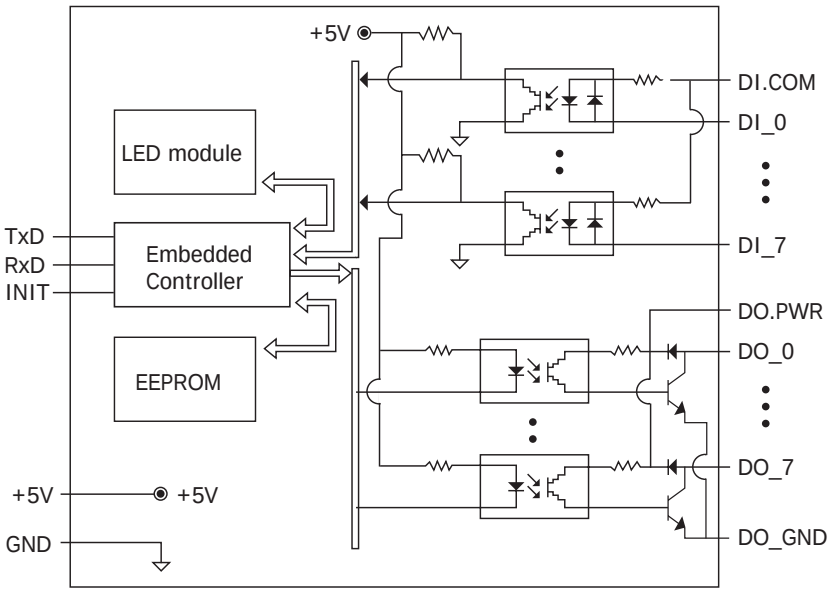
Pin Assignment

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

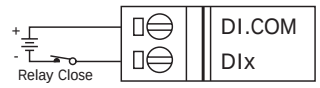
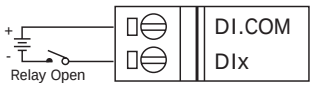
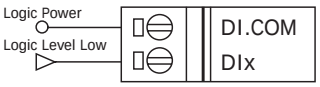
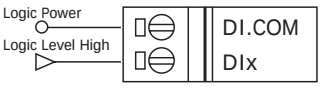
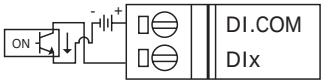
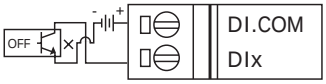
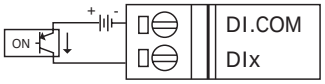
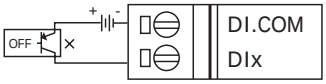
Ordering Information

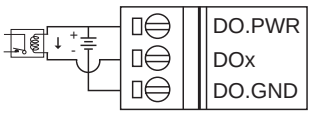
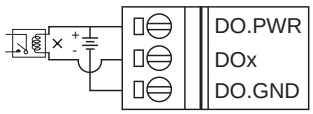
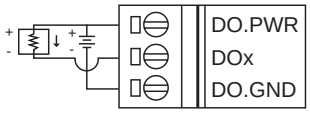
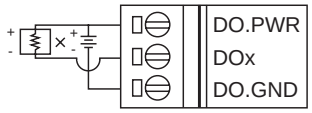
i-87054W-G	8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module with 16-bit Counters (Gray Cover)

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

Digital Input & Output

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

i-87055W

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

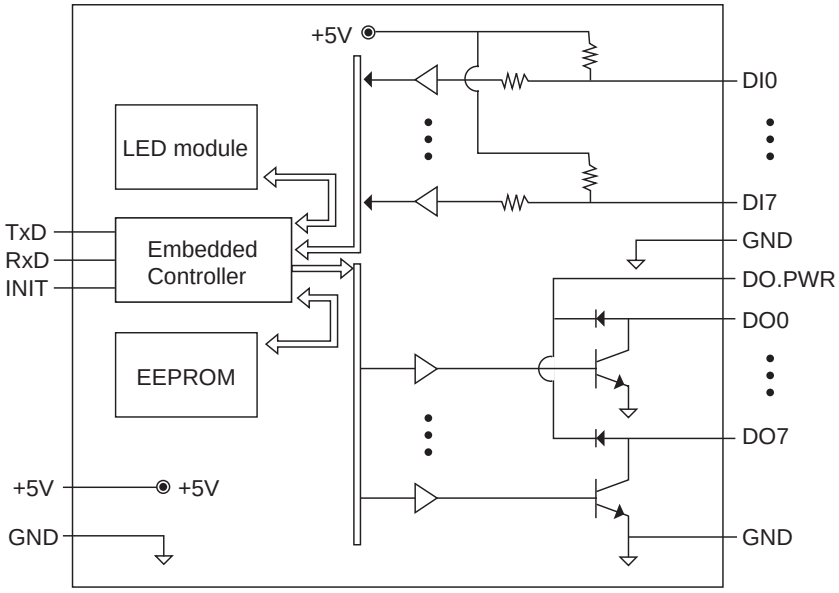
Pin Assignment

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

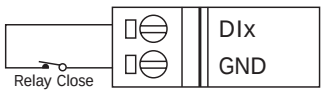
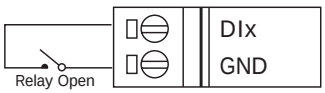
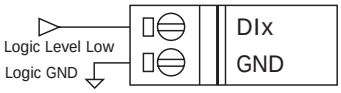
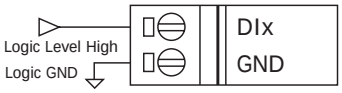
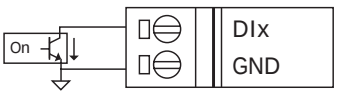
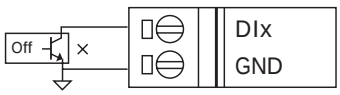
Ordering Information

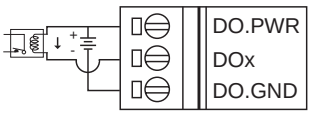
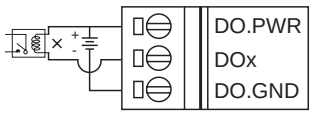
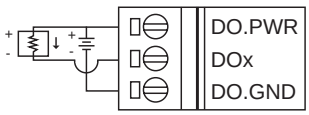
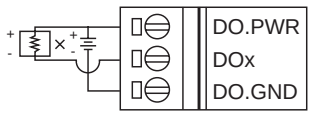
i-87055W-G CR	8-channel Non-Isolated Digital Input and 8-channel Non-Isolated Digital Output Module with 16-bit Counters (Gray Cover) (RoHS)

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

Digital Input & Output

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

i-87063W

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

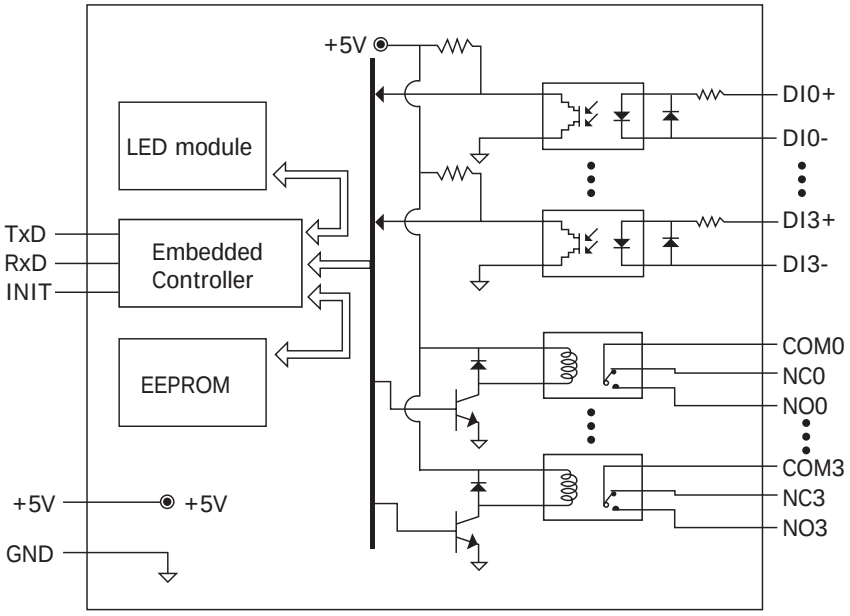
Specifications

■ Digital Input			
Input channels	4 (Sink)	**Counters**	Channels: 4 Max. Counters : 16-bit (65535) Max. Input Frequency: 100Hz Min. Pulse Width: 5ms
Input type	Isolation, Differential		
Input impedance	3K Ohms, 0.25W		
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)

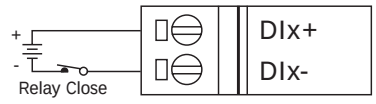
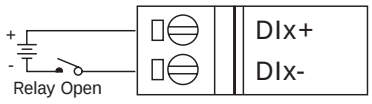
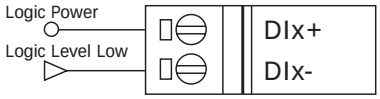
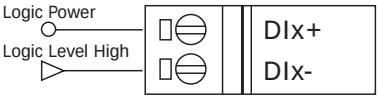
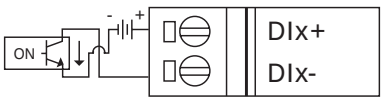
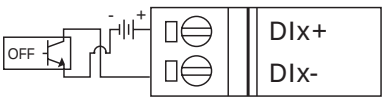
Internal I/O Structure

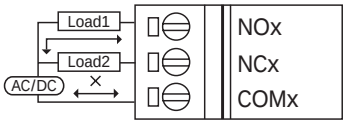
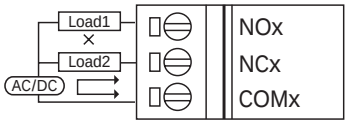


Pin Assignment

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

Digital Output

32-channel Sink Type Open Collector **Isolated** Digital Output Module

i-87041W

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 Moun ting and 37-pin D-sub Connector (pitch:5.08mm)
DN-37-381-A	I/O Connector Block with DIN-Rail Moun ting 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	

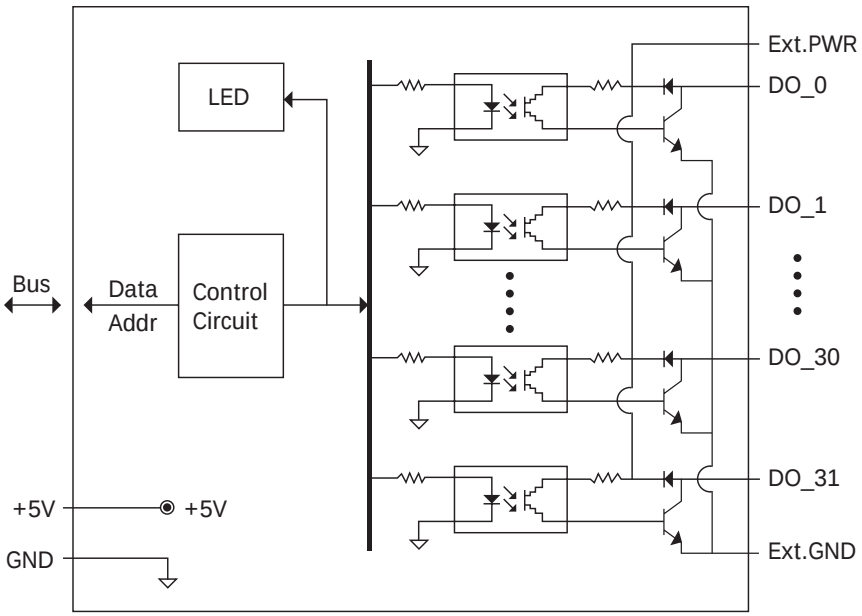
i-8040/ 41/ 42 and i-87040W/ 41W with DN-37-381-A

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

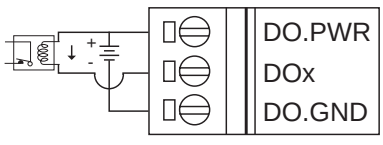
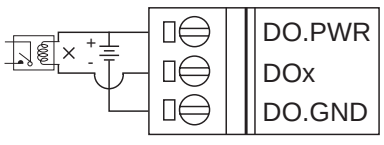
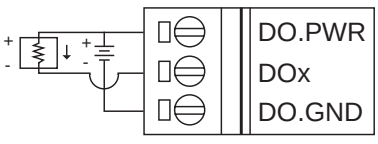
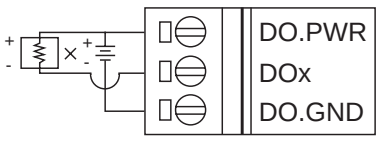


Pin Assignment

Pin Assignment Name	Terminal No.		Terminal No.	Pin Assignment Name
Ext.PWR	19		37	Ext.PWR
Ext.GND	18		36	Ext.GND
Ext.GND	17		35	DO_31
DO_15	16		34	DO_30
DO_14	15		33	DO_29
DO_13	14		32	DO_28
DO_12	13		31	DO_27
DO_11	12		30	DO_26
DO_10	11		29	DO_25
DO_9	10		28	DO_24
DO_8	09		27	DO_23
DO_7	08		26	DO_22
DO_6	07		25	DO_21
DO_5	06		24	DO_20
DO_4	05		23	DO_19
DO_3	04		22	DO_18
DO_2	03		21	DO_17
DO_1	02		20	DO_16
DO_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	Relay ON	Relay Off
		
Resistance Load		
		

i-87K DO Modules

Digital Output

16-channel Open Collector Isolated Digital Output Module

i-87057W

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

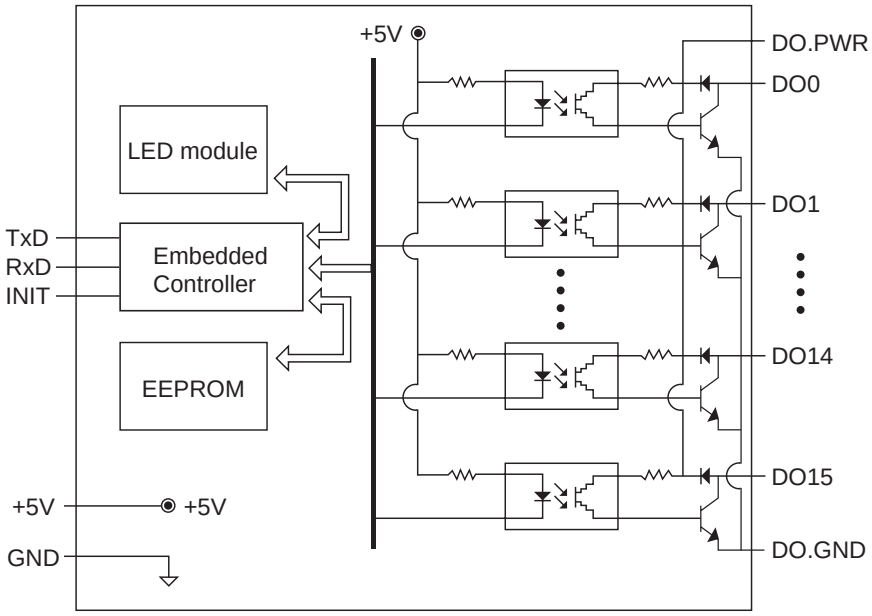
Specifications

■ 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)

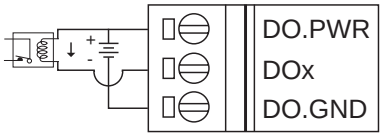
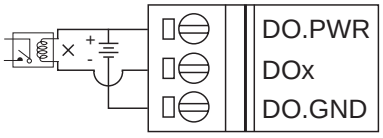
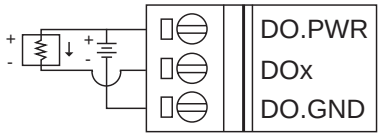
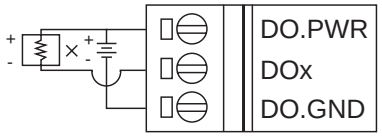
Internal I/O Structure



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
	Relay ON	Relay Off
Drive Relay		
Resistance Load		

i-87K DO Modules

Digital Output

8-channel Power Relay Output Module

i-87064W

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

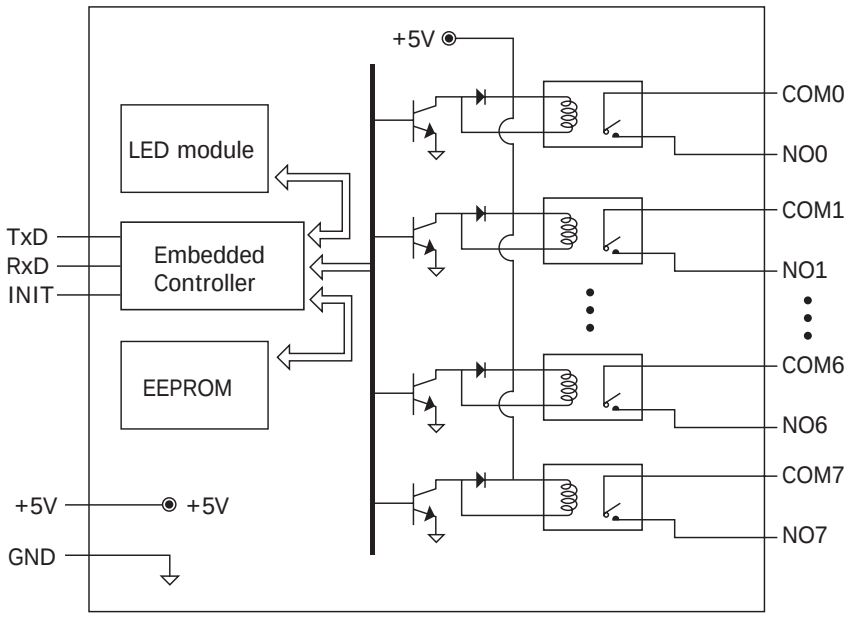
■ Digital Output			
Output channels	8	**Output type**	Power Relay, Form A (Normal Open)
Operating voltage range	5 ~ 240VAC (47~63Hz) 5 ~ 24VDC	**Relay contact voltage range**	0~ 250VAC (47~63Hz) 0~ 30VDC
Max. load current	5.0 Arms	**Max. operate time**	6 ms Max.
Max. release time	3 ms Max.	**Insulation resistance**	Min. 1,000 MOhms, at 500VDC
Relay life	Mechanical : 2*10,000,000 Min. Electrical : 100, 000 min. , Resistive	**Dielectric strength**	Detween Open Contacts : 750Vrms (at 1 Minute) Detween 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)

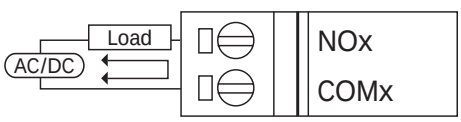
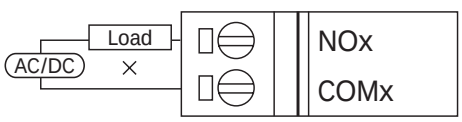
Internal I/O Structure



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 ON	Relay Off
Relay Contact		

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

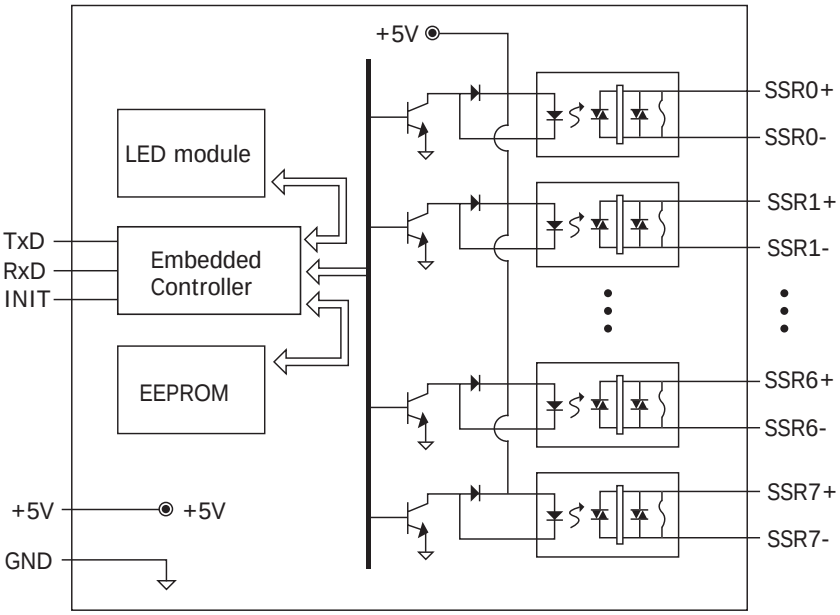
■ Digital Output			
Output channels	8	**Output type**	AC SSR, Form A (Normal Open)
Rated load voltage	24 to 265Vrms	**Rated load current**	1.0 Arms
Max. operate time	1 ms	**Max. release time**	1/2 Cycle + 1 ms
Max. on-state voltage drop	1.2Vrms	**Max. off-state leakage current**	0.75mA (at 100 Vrms 60Hz), 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)

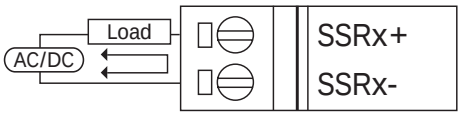
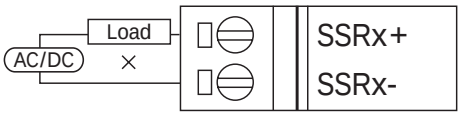
Internal I/O Structure



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

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

i-87066W

Specifications

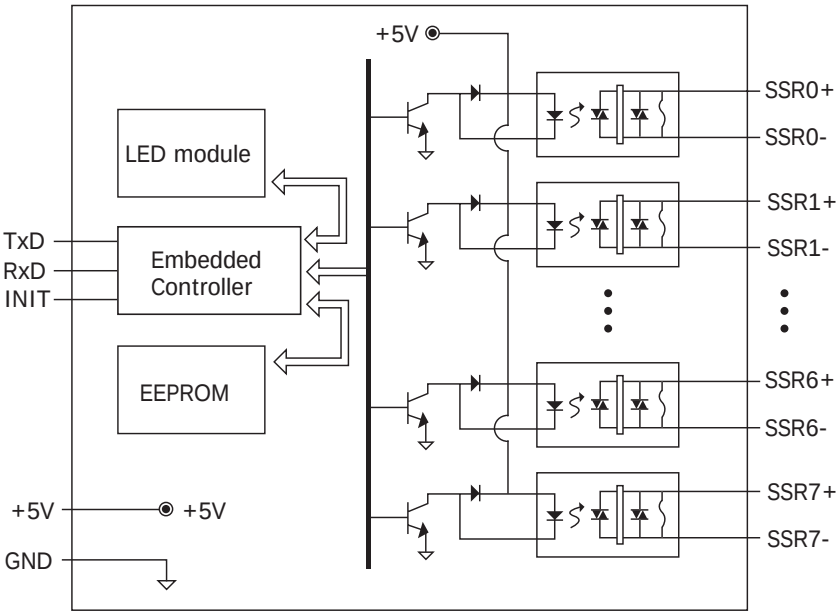
■ Digital Output			
Output channels	8	**Output type**	DC SSR, Form A (Normal Open)
Rated load voltage	3 to 30 VDC	**Rated load current**	1.0 Arms
Max. operate time	1 ms	**Max. release time**	1 ms
Max. on-state voltage drop	1.2Vrms	**Max. off-state leakage current**	0.1mA at 30VDC
Insulation resistance	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)

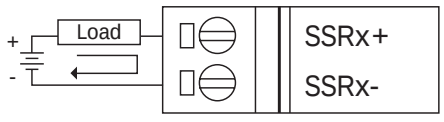
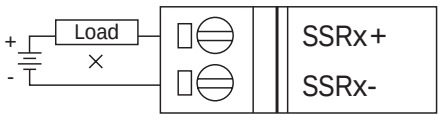
Internal I/O Structure



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

Digital Output

4-channel Form-A Relay Output and
4-channel Form-C Relay Output Module

i-87068W

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

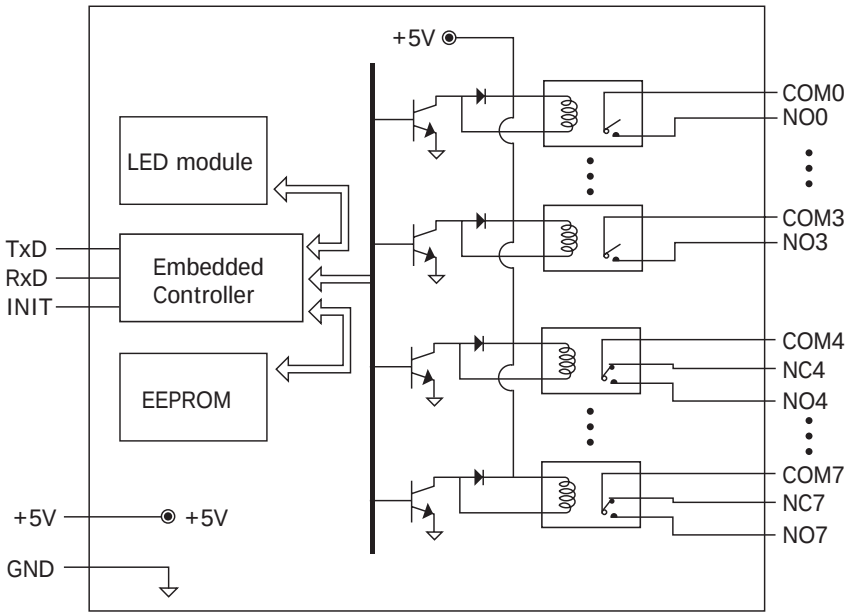
Specifications

■ 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 Ouput 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)

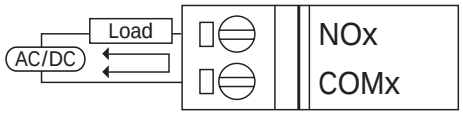
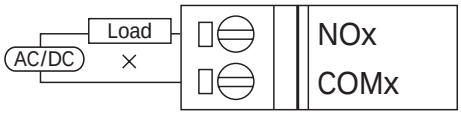
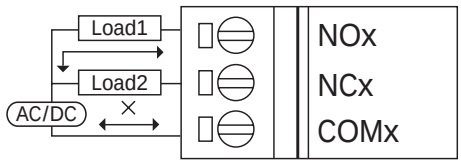
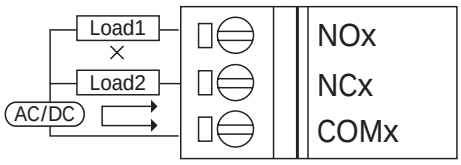
Internal I/O Structure



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
		
Form C Relay Contact	Relay ON	Relay Off
		

i-87K DO Modules

Digital Output

8-channel PhotoMOS Relay Output Module

i-87069W

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

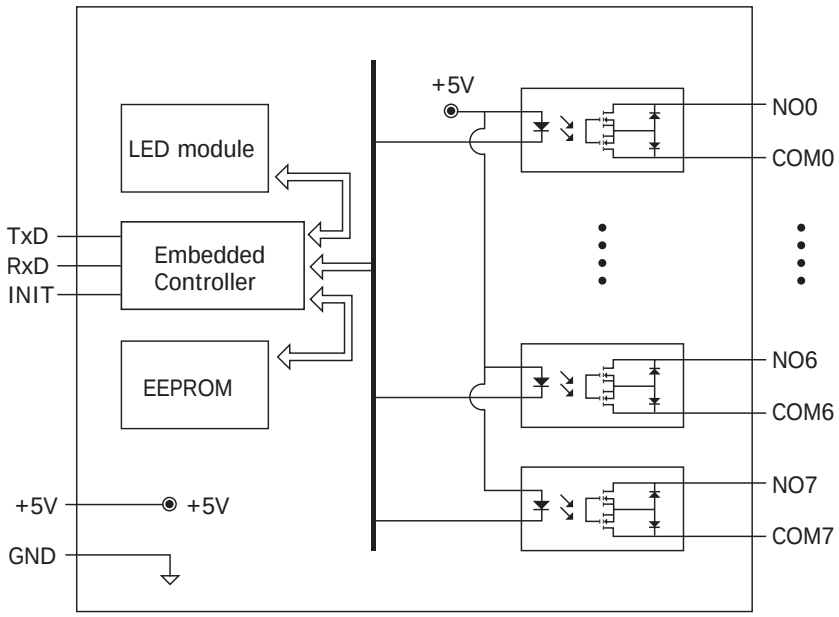
■ Digital Output			
Output channels	8	**Output type**	PhotoMOS Relay, Form A
Load voltage	350V max. at DC/ AC	**Load current**	0.13A max.
Turn on time	0.7m s (Typical)	**Turn off time**	0.05ms (Typical)
Output off state leakage current	1 uA	**Peak load current**	0.4A at 100ms
ESD protection	±4kV Contact 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	■ Power	
1 LED as Power/ Communication Indicator 8 LEDs as PhotoMos Relay Output Indicators	**Power consumption**	0.5W

Ordering Information

i-87069W-G CR	8-channel Photo-MOS Relay Output Module (Gray Cover) (RoHS)

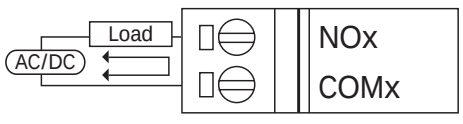
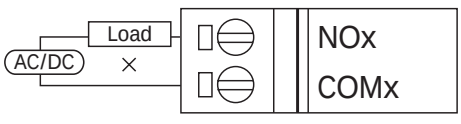
Internal I/O Structure



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
	Relay ON	Relay Off
Form A Relay Contact		

Counter/Frequency

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

■ 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 frquency 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	

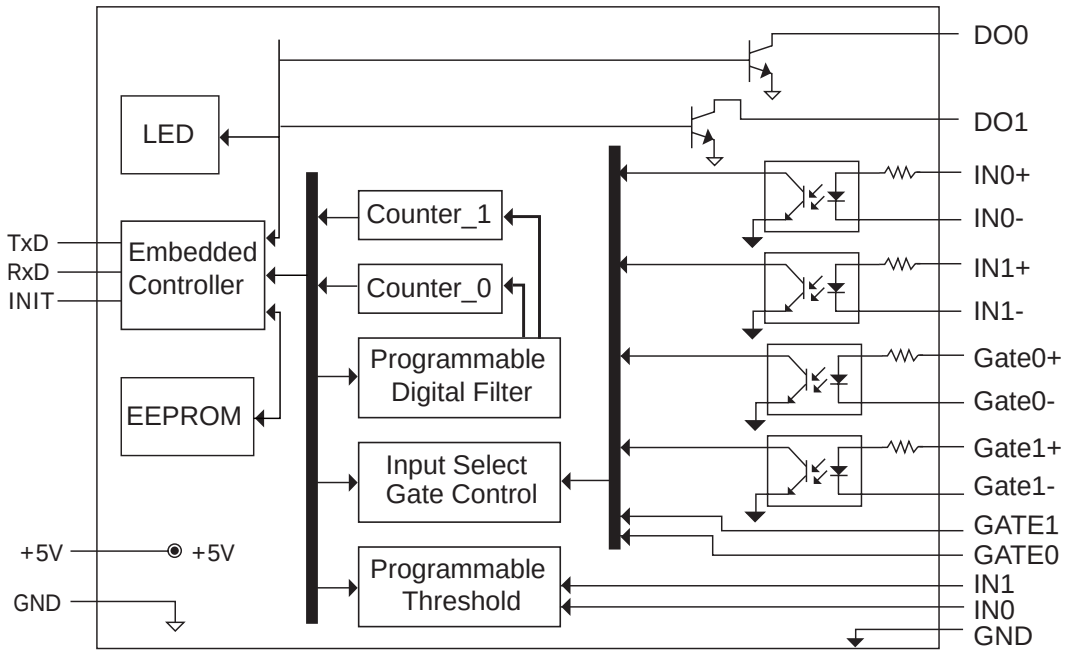
Pin Assignment

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

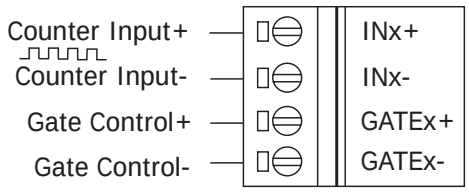


Wire Connection

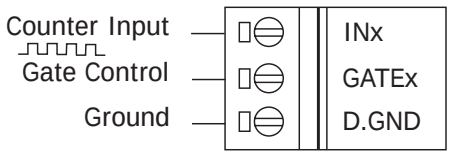
Input Type

Counter Type

Isolation

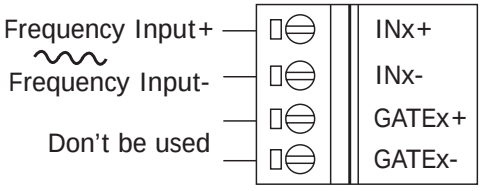


Non-isolation

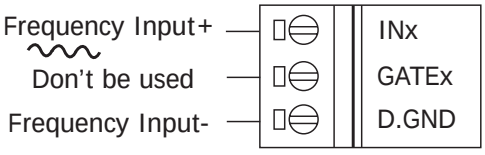


Frequency Type

Isolation



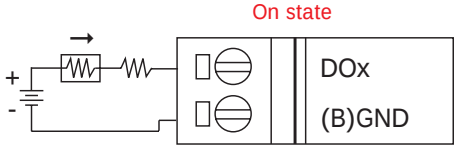
Non-isolation



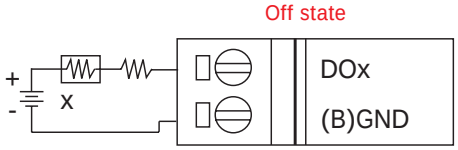
Output Type

Resistance Load

On state

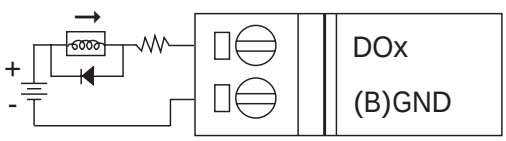


Off state

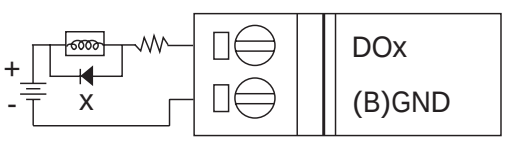


Inductance Load

On state



Off state



Blank I/O Module for i-8000

Description

- Blank I/O modules

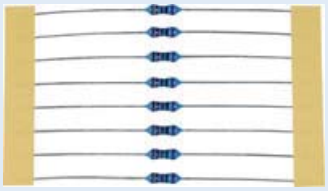
4SIPP-801-CAB
4SIPP-801-CAG

Odering 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 Communcation > 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	 Use for current type of i-7017/18, M-7017/18 series

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