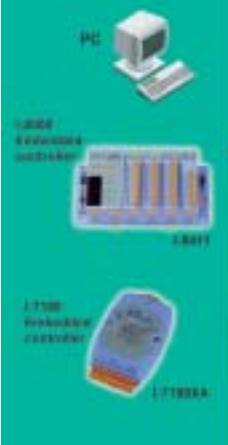


i-7000 Remote I/O Modules

SERIES

Controller



Remote Data Acquisition



Introduction

I-7000 series provides cost-effective protection and conditioning for a wide range of valuable industrial control signals and systems. Our product line includes sensor-to-computer, computer-to-sensor, digital I/O, timer/counter, USB to RS-232 converter, USB to RS-485/422 converter, RS-232 to RS-485/422 converter, RS-485/422 repeater, RS-485 Hub, Man machine interface, Data display and application software. I-7000 modules are good for small I/O channels, while I-87K I/O expansion units are good for middle-size I/O channels.

Features

- More than 100 modules are provided and more new modules are coming
- Industrial quality
- Self-Tuner design
- Dual Watchdog design
- High Speed Isolated Repeater
- "Smart" Device Design
- I/O Range Programmable
- Wide Range Power Input
- Easy Mounting and Connection
- Complete software environment



Piggy Back



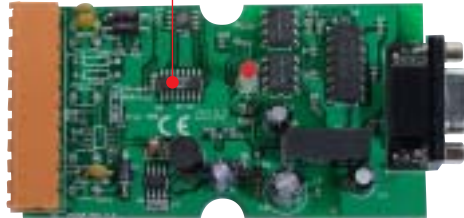
DIN-Rail Mounting

i-7000 "Self Tuner" Innovative Design SERIES

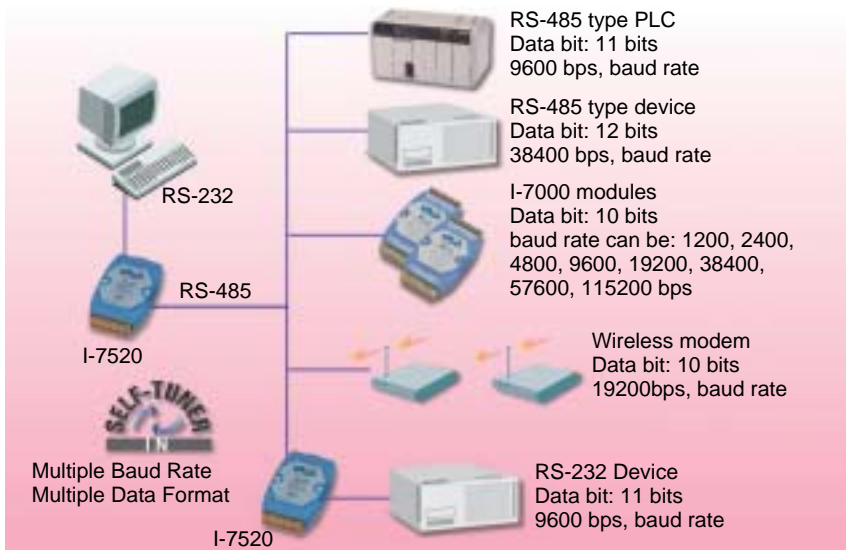
"Self Tuner" A New Technology You Should Know !

U.S. Patent, US 6,401,159 B1
P.R.O.C.PAT NO.
PAT No. 086674
PAT No. 132457

Self Tuner Chip



A conventional RS-232 to RS-485 converter uses the DIP switch to select the baud rate and data format for the whole RS-485 network. All modules, devices and equipment in the network should be configured to the same baud rate and data format. Unfortunately most real world applications can't be implemented in such a simple way. The "Self Tuner" is an innovative chip designed to solve this problem. Every converter contains a "Self Tuner" chip. This chip can auto-tune the baud rate and data format to the whole network. Therefore the I-7520 can connect to different baud rates and different data formats with devices in the same network.



i-7000 **RS-485 Repeater / Hub**

SERIES

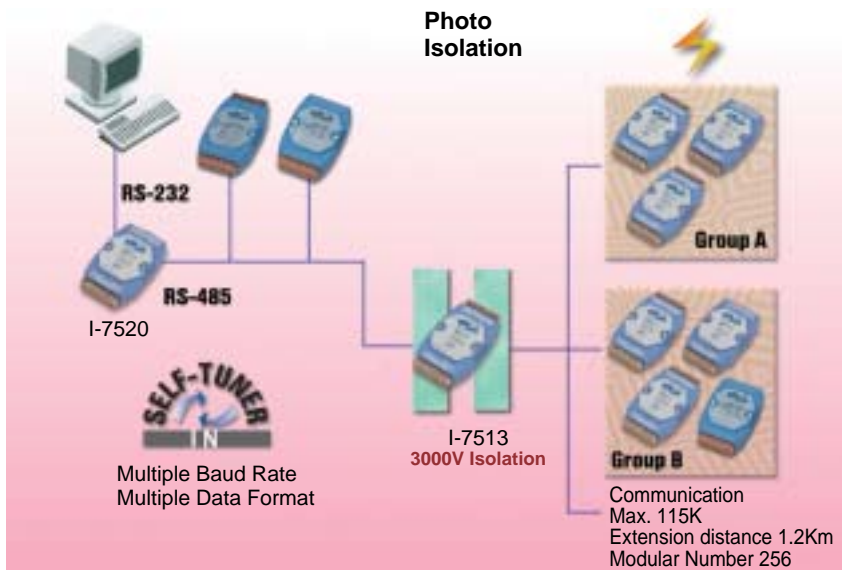
High Speed & High Quality Isolated RS-485 Repeater / Hub

Drop the low-end Repeater / Hub Save your RS-485 Network



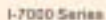
A conventional RS-485 repeater / Hub uses the DIP switch to select the baud rate and data format for the whole RS-485 network. Our repeater / Hub contains an innovative "Self Tuner" chip. This chip auto-tunes the baud rate and the data format to the whole network and makes the network very stable. Because Due to superior design, every repeater can extend the communication to another 1.2 Km at 9600K speed. If the speed is lower than 9600K, the extended distance can be up to 2.1 Km or 3.4Km. Some low-end repeaters can fit repeat signals well and cause the whole network to become unstable. Those low-end repeaters don't have isolation. The whole network could be destroyed by lighting or transient high voltage. If your RS-485 is unstable, please change the converter and repeater / Hub.

Do you have any RS-485 wiring problems? Our new module I-7513 is one to three ports RS-485 Hub. Each channel has its own RS-485 driver IC on it, so it can support star-shaped wiring. And refer to section 5-14 for more Repeater / Hub modules.



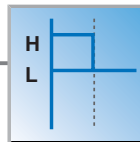
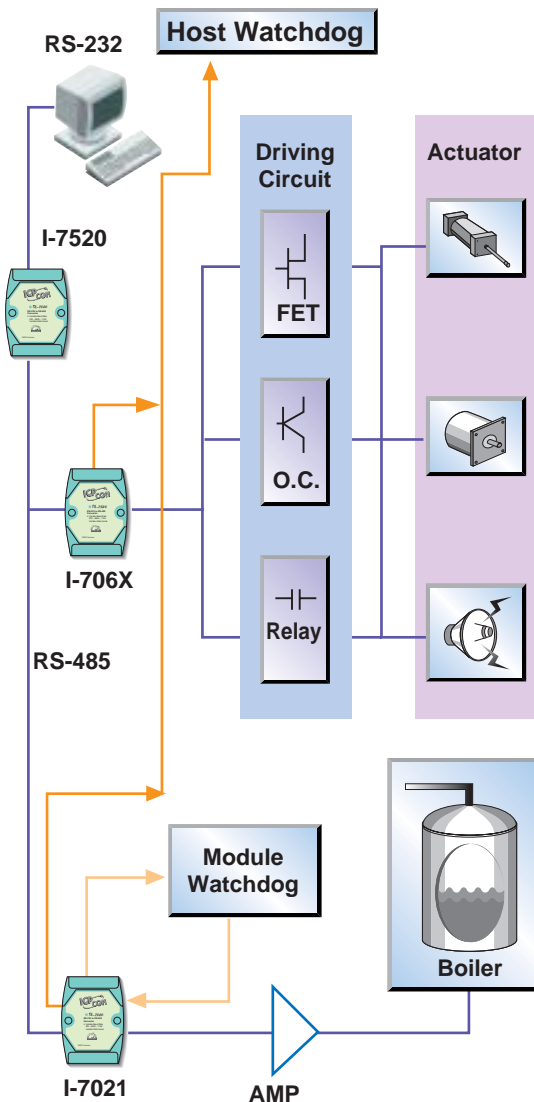
U SERIES

Bus Type

[illegible]

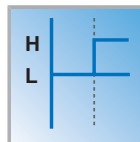
i-7000 "Dual Watchdog" SERIES

Network Control Made Reliable



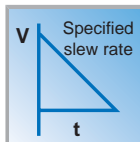
Active host watchdog

Output state goes to safe state: L



Active host watchdog

Output state goes to safe state: H



Active host watchdog

D/A output goes to safe state

Why! "Dual Watchdog"

Some company's remote I/O modules don't have the "Dual Watchdog", it may cause unrecoverable damage to the whole control system.

What is "Dual Watchdog"

I-7000 Provides Module and Host Watchdogs. The Module Watchdog is a hardware watchdog. The Host watchdog is a software watchdog. The module watchdog is designed to automatically reset the μp when the module fails. The host watchdog monitors the host controller (PC or PLC). The output of module can go to a safe state, if the host fails.

Example 1

When the host watchdog is active, the output of Digital I/O will go to a safe state, logical high or low. The user can specify the logical state.

Example 2

When the host watchdog is active, the output of D/A is stepped down until the final (safe) value is reached and a gradual controlled output slew rate is followed. The user can specify the slew rate of the output voltage.

Analog Input Modules Selection Guide

Module		I-7011/ I-7011D	I-7011P/ I-7011PD	I-7012/ I-7012D	I-7012F/ I-7012FD	I-7013/ I-7013D	I-7033/ I-7033D	I-7015	I-7014D
Analog Input	Resolution	16 bit	16 bit	16 bit	16/12 bit	16 bit	16 bit	16 bit	16 bit
	Input channel	1 diff.	1 diff.	1 diff.	1 diff.	1 diff.	3 diff.	6 diff.	1 diff.
	Sampling rate	10Hz	10Hz	10Hz	10/100Hz	10Hz	10Hz	10Hz	10Hz
	Voltage input	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	+/-150mV +/-500mV +/-1V +/-5V +/-10V	+/-150mV +/-500mV +/-1V +/-5V +/-10V	—	—	—	+/-150mV +/-500mV +/-1V +/-5V +/-10V
	Current input	+/-20mA	+/-20mA	+/-20mA	+/-20mA	—	—	—	+/-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	—	—	Pt Ni-RTD (2/3/4 wire)	Pt Ni-RTD (2/3/4 wire)	Pt Ni-RTD (3 wire)	—
	4 1/2 digit LED Display	Yes for I-7011D	Yes for I-7011PD	Yes for I-7012D	Yes for I-7012FD	Yes for I-7013D	Yes for I-7033D	Yes for I-7015D	Yes for I-7014D
	Isolated loop power	—	—	—	—	—	—	—	Yes +15V
	Input Linear scaling	—	—	—	—	—	—	—	Yes
	Isolation Voltage	3000V	3000V	3000V	3000V	3000V	3000V	3000V	3000V
Digital Input & Digital Output	Digital input channels	1	1	1	1	—	—	—	1
	Digital output channels	2	2	2	2	—	—	—	2
	Event counter	Yes	Yes	Yes	Yes	—	—	—	Yes
	High/Low Alarm	Yes	Yes	Yes	Yes	—	—	—	Yes
Dual Watchdog Timer		Yes	Yes	Yes	Yes	Yes	Yes	Yes	—
Frame Ground		—	—	—	—	—	—	Yes	—
Availability		Yes	Yes	Yes	Yes	Yes	Yes	Call	Yes

Analog Input Modules Selection Guide

Module		I-7016/ I-7016D	I-7016P/ I-7016PD (New)	I-7017	I-7017F	I-7017C	I-7017R	I-7017RC
Analog Input	Resolution	16 bit	16 bit	16 bit	16/12 bit	16 bit	16 bit	16 bit
	Input channel	2 diff.	1 diff.	8 diff.	8 diff.	8 diff.	8 diff.	8 diff.
	Sampling rate	10Hz	10Hz	10Hz (total)	60Hz (total)	10Hz (total)	10Hz (total)	10Hz (total)
	Fast Mode (12bit)	—	—	—	Note (1)	Note (1)	—	—
	Voltage input	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	+/-150mV +/-500mV +/-1V +/-5V +/-10V	+/-150mV +/-500mV +/-1V +/-5V +/-10V		+/-150mV +/-500mV +/-1V +/-5V +/-10V	+/-150mV +/-500mV +/-1V +/-5V +/-10V
	Current input	+/-20mA	+/-20mA	+/-20mA	+/-20mA	+/-20mA	+/-20mA	+/-20mA
	Sensor input	4-wire Strain gauge Input	6-wire Strain gauge Input	—	—	—	—	—
	4 1/2 digit LED Display	Yes for I-7016D	Yes for I-7016PD	—	—	—	—	—
	Input Linear scaling	Yes	Yes	—	—	—	—	—
	Isolation Voltage	3000V	3000V	3000V	3000V	3000V	3000V	3000V
Digital Input & Digital 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	Yes	Yes	Yes	Yes	Yes
Over voltage protection		—	—	+/-35V	+/-35V	+/-35V	240 Vrms	240 Vrms
Frame Ground		—	—	—	—	Yes	Yes	Yes
Availability		Yes	Yes	Yes	Yes	Call	Call	Call

i-7000 *Analog Input Modules Selection Guide*

SERIES

Analog Input Modules Selection Guide

Module		I-7018	I-7018P	I-7018R	I-7018BL	I-7019
Analog Input	Resolution	16 bit	16 bit	16 bit	16 bit	16 bit
	Input channel	8 diff.	8 diff.	8 diff.	8 diff.	8 diff.
	Sampling rate	10Hz (total)	10Hz (total)	10Hz (total)	10Hz (total)	10Hz (total)
	Voltage input	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	+/-15mV +/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	+/-50mV +/-100mV +/-500mV +/-1V +/-2.5V	—	+/-50mV +/-100mV +/-500mV +/-1V +/-2.5V
	Current input	+/-20mA	+/-20mA	+/-20mA		+/-20mA
	Sensor input	K.T.E.R.S.B N.C. thermocouple	J.K.T.E.R.S.B N.C.L.M.L2, DIN43710 thermocouple	J.K.T.E.R.S.B N.C.L.M.L2 DIN43710 thermocouple	K.T.E.R.S.B N.C.L thermocouple	Pt, Ni RTD J.K.T.E.R.S.B. N.C.L.M.L2 DIN43710 thermocouple
	4 1/2 digit LED Display	—	—	—	—	—
	Isolation Voltage	3000V	3000V	3000V	3000V	3000V
	Break Line Detection					
Dual Watchdog Timer		Yes	Yes	Yes	Yes	Yes
Over voltage protection		+/- 35V	+/- 35V	240 Vrms	+/- 35V	240 Vrms
Frame Ground		—	—	Yes	Yes	Yes
Availability		Yes	Yes	Call	Call	Call

i-7000 SERIES *Digital I/O Modules Selection Guide*

Digital I/O, Relay and Counter Selection Guide

Module		I-7050/ I-7050D	I-7051/ I-7051D	I-7052/ I-7052D	I-7053/ I-7053D	I-7055/ I-7055D	I-7058/ I-7058D
Digital input and Digital output	Digital input channels	7	16 Isolation (3750V)	8 Isolation (5000V)	16	8 Isolation (3750V)	8 Isolation (5000V)
	Digital output channels (open collector)	8	—	—	—	8 Isolation (3750V)	—
	Alarm Setting	—	—	—	—	—	—
Counter	Channels	7	16	8	16	8	8
	Input frequency	100Hz	100Hz	100Hz	100Hz	100Hz	—
LED Display		Yes for I-7050D	Yes for I-7051D	Yes for I-7052D	Yes for I-7053D	Yes for I-7055D	Yes for I-7058D
Safe Value (When Host Fail or communication fail)		Yes	—	—	—	Yes	—
Power-on Preset Value		Yes	—	—	—	Yes	—
Dual Watchdog Timer		Yes	Yes	Yes	Yes	Yes	Yes
Availability		Yes	call	Yes	Yes	call	call

Digital I/O, Relay and Counter Selection Guide

Module		I-7041/ I-7041D	I-7042/ I-7042D	I-7043/ I-7043D	I-7044/ I-7044D	I-7045 I-7045D
Digital input and Digital output	Digital input channels	14 Isolation (3750V)	—	—	4 Isolation (3750V)	—
	Digital output channels (open collector)	—	13 Isolation (3750V)	16	8 Isolation (3750V)	14 Isolation (3750)
	Alarm Setting	—	—	—	—	—
Counter	Channels	14	—	—	4	—
	Input frequency	100Hz	—	—	100Hz	—
LED Display		Yes for I-7041D	Yes for I-7042D	Yes for I-7043D	Yes for I-7044D	Yes for I-7045D
Safe Value (When Host Fail or communication fail)		—	Yes	Yes	Yes	Yes
Power-on Preset Value		—	Yes	Yes	Yes	Yes
Dual Watchdog Timer		Yes	Yes	Yes	Yes	Yes
Availability		Yes	Yes	Yes	Yes	call

i-7000 SERIES Digital I/O Modules Selection Guide

Digital I/O, Relay and Counter Selection Guide

Module		I-7060/ I-7060D	I-7063/63D/63A/63AD/ I-7063B/63BD	I-7065/65D/65A/65AD/ I-7065B/65BD
Digital input and Digital output	Digital input channels	4 Isolation (3750V)	8 Isolation (3750V)	4 Isolation (3750V)
	Digital output channels	4 Channel Relay Form A x 2 Form C x 2	3 Channel Relay I-7063: Form A; AC 250V5A; DC 30V/5A I-7063A: AC type SSR I-7063B: DC type SSR	5 Channel Relay I-7065: Form A; AC 250V5A; DC 30V/5A I-7065A: AC type SSR I-7065B: DC type SSR
	Alarm Setting	—	—	—
Counter	Channels	4	8	4
	Input frequency	100Hz	100Hz	100Hz
LED Display		Yes for I-7060D	Yes for 7063D/7063AD/7063BD	Yes for 7065D/7065AD/7065BD
Safe Value (When Host Fail or communication fail)		Yes	Yes	Yes
Power-on Preset Value		Yes	Yes	Yes
Dual Watchdog Timer		Yes	Yes	Yes
Availability		Yes	Yes	Yes

Digital I/O, Relay and Counter Selection Guide

Module		I-7066/ I-7066D	I-7067/ I-7067D	I-7080/ I-7080D
Digital input and Digital output	Digital input channels	—	—	—
	Digital output channels	7 Channel Photo Mos Relay	7 Channel Relay Form A	2 Channel
	Alarm Setting	—	—	—
Counter	Channels	—	—	2
	Input frequency	—	—	100 KHz
LED Display		Yes for I-7066D	Yes for I-7067D	Yes for I-7080D
Safe Value (When Host Fail or communication fail)		Yes	Yes	Yes
Power-on Preset Value		Yes	Yes	Yes
Dual Watchdog Timer		Yes	Yes	Yes
Availability		Yes	Yes	Yes

i-7000 SERIES Analog Output Modules Selection Guide

Analog Output Module Selection Guide

Module		I-7021	I-7021P	I-7022	I-7024
Analog Output	Resolution	12 bit	16 bit	12 bit	14 bit
	Output Channels	1	1	2 (* 1)	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
Safe Value (When Host Fail or communication fail)		Yes	Yes	Yes	Yes
Power-on Preset Value		Yes	Yes	Yes	Yes
Dual Watchdog Timer		Yes	Yes	Yes	Yes
Availability		Yes	Yes	Yes	Yes

* 1: channel to channel isolation

Touch Panel Selection Guide

Module	Touch 200	Touch 250	Touch 510S/ Touch 510T
Display	5.7"	9.4"	10.4"
Resolution	320(W) x 240(W)	640(W) x 480(W)	640(W) x 480(W)
Display Type High Contrast	Blue mode LCD	Blue mode LCD	Color LCD (S: STN; T: TFT)
Backlight	CCFT	CCFT	CCFT
Interface Port	RS-232/RS-485	RS-232/RS-485	RS-232/RS-485
Touch Type	Resistive	Resistive	Resistive
Display Area	120(W) x 90(H)	196(W) x 148(H)	215(W) x 162(H)
Power Consumption	12W	12W	15W
Dimension	204 x 150 x 75mm	90 x 230 x 60mm	315 x 238 x 62mm
Weight	1.0Kg	1.8Kg	2.5Kg

i-7000 **USB Converter & Hub**

SERIES

What is USB?

USB, or Universal Serial Bus is a connectivity specification developed by computer and telecommunication industry members for attaching peripherals to computers.

USB is designed to free all the troubles when installing external peripherals. It eliminates the hassle to open computer case for installing cards needed for certain devices.

It is designed to meet Microsoft Plug and Play (PnP) specification, meaning users can install, and hot-swap devices without long installation procedures and reboots.

I-7560



I-7560:

USB to RS-232 Converter

- Compatibility: USB 1.1 standard
- Input port : USB
- Output port: 9-wire RS-232
- RS-232 Signals: TxD, RxD, RTS, CTS, DSR, DTR, DCD, RI, and GND
- Driver Supported:
Windows 98/ME/2000/XP/Linux/Mac

I-7561



U.S. Patent,
US 6,401,159 B1

I-7561:

USB to RS-232/422/485 Converter

- Compatibility : USB 1.1 standard
- Input : USB protocol
- Output : RS-232/422/485 protocol
- "Self Tuner" inside
- Driver Supported:
Windows 98/ME/2000/XP/Linux/Mac

I-7563



U.S. Patent,
US 6,401,159 B1

I-7563:

USB to 3 channels RS-485 Converter & Hub

- Compatibility: USB 1.1 standard
- Input port: USB.
- Output port: Three RS-485.
- "Self Tuner" inside.
- 3000V DC-to-DC Power Isolation.
- Driver supported:
Windows 98/ME/2000/XP/Linux/Mac

PCISA-7520R



U.S. Patent,
US 6,401,159 B1

PCISA-7520R:

PCI / ISA Bus RS-232 to RS-485 Card

- PCI/ISA Bus interface
- Input: RS-232 protocol
- Output: RS-485 protocol
- "Self Tuner" inside
- Speed: 300 ~115,200 bps
- 3000 V isolation
- Multiple Baud Rate; Multiple Data Format

PCISA-7520AR



U.S. Patent,
US 6,401,159 B1

PCISA-7520AR:

PCI / ISA Bus RS-232 to RS-422/485 card

- PCI/ISA Bus interface
- Input: RS-232 protocol
- Output: RS-422/485 protocol
- Other spec. same as PCISA-7520R

I-7551



I-7551:

Isolated RS-232 to RS-232 Converter

- Jumpers JP1 and JP2 select the RS-232 input source type.
- Input: TxD, RxD, CTS, RTS, GND or TxD, RxD, DCD, DTR, GND
- Output: TxD, RxD, CTS, RTS, GND or TxD, RxD, DCD, DTR, GND
- 3000V DC-to-DC Power Isolation.
- 3570Vrms Channel to Channel isolation

I-7520



U.S. Patent,
US 6,401,159 B1

I-7520:

RS-232 to RS-485 Converter

I-7520R:

I-7520 with 3000V DC isolation at RS-485 side

- Input: RS-232 protocol
- Output: RS-485 protocol
- "Self Tuner" inside
- Speed: 300 ~115,200 bps
- 3000 V isolation
- Multiple Baud Rate; Multiple Data Format

I-7520A



U.S. Patent,
US 6,401,159 B1

I-7520A:

RS-232 to RS-422/RS-485 converter

- Input: RS-232 protocol
- Output: RS-422/485 protocol
- Other spec. is the same as I-7520

I-7520AR:

RS-232 to RS-422/RS-485 converter

- Same as I-7520A, except the power side is different

i-7000 SERIES *Isolated RS-422/485 Repeaters & Hubs*

I-7510



U.S. Patent,
US 6,401,159 B1

I-7510A



I-7510:

RS-485 Repeater

- "Self-tuner" inside
- Multiple Baud Rate: 300,...9600,...115, 200 bps
- Multiple Data Format
- Automatically adjust Baud Rate and Data Format

I-7510A:

RS-422/RS-485 Repeater

- Same as I-7510
- Plus RS-422 repeater

I-7510AR



U.S. Patent,
US 6,401,159 B1

I-7510AR:

Three-way isolated RS-422/485 Repeater

- Same as I-7510A
- 3000V DC-to-DC Power Isolation.

I-7513

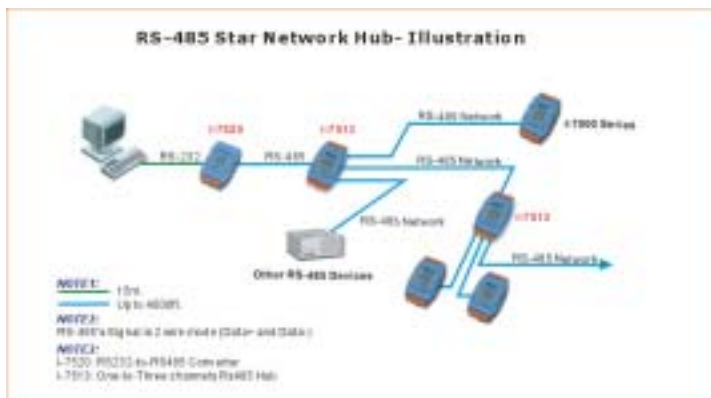


U.S. Patent,
US 6,401,159 B1

I-7513:

Three-way isolated RS-485 to 3 Channels RS-485 Hub

- Input port: One RS-485.
- Output port: Three channels RS-485.
- "Self Tuner" inside.
- Speed: 300 ~ 115,200 bps.
- 3000V DC-to-DC Power Isolation.



i-7000 *Analog I/O Modules*

SERIES

I-7011



I-7011D



I-7011:

Thermocouple Input Module

I-7011D: I-7011 with LED Display

- Analog input type: thermocouple, mV, V or mA
- Input Range: $\pm 15\text{mV}$, $\pm 50\text{mV}$, $\pm 100\text{mV}$, $\pm 500\text{mV}$, $\pm 1\text{V}$, $\pm 2.5\text{V}$, $\pm 20\text{mA}$
- Thermocouple type: J, K, T, E, R, S, B, N, C
- Sampling rate: 10 samples/sec
- Programmable Hi/Low alarm

I-7011P



I-7011PD



I-7011P

I-7011PD: I-7011P with LED Display

- Enhanced version of I-7011
- Thermocouple type: J, K, T, E, R, S, B, N, C, **L**, **M**

I-7012



I-7012D



I-7012:

Analog Input Module

I-7012D:

I-7012 with LED Display

- Analog input type: mV, mA
- Input Range: $\pm 150\text{mV}$, $\pm 500\text{mV}$, $\pm 1\text{V}$, $\pm 5\text{V}$, $\pm 10\text{V}$, $\pm 20\text{mA}$
- Sampling rate: 10 samples/sec.
- LED indicator: 4 1/2 digit readout

I-7012F



I-7012FD



I-7012F

I-7012FD: I-7012F with LED Display

- High speed version of I-7012
- Can be configured as 12-bit resolution and 100Hz sampling rate
- Other spec. is the same as I-7012

I-7013



I-7013D



I-7013:

RTD Input Module

I-7013D: I-7013 with LED Display

- Analog input type: Pt or Ni RTD
- Sampling rate: 10 samples/sec.
- Input connection: 2, 3, or 4 wires
- Pt 100 input range: $\pm 100^\circ\text{C}$, $0-100^\circ\text{C}$, $0-200^\circ\text{C}$, $0-600^\circ\text{C}$
- Ni input range: $-80-100^\circ\text{C}$, $0-100^\circ\text{C}$

i-7000 Analog I/O Modules

SERIES

I-7033



I-7033D



I-7033:3-channel RTD Input Module

I-7033D: I-7033 with LED Display

- Sampling rate: 15Hz (Total)
- Other Spec. is the same as I-7013

I-7015



I-7015D



I-7015:6-channel 3 wire RTD Input Module

I-7015D: I-7015 with LED Display

- Sampling rate: 15Hz (Total)
- Other Spec. is the same as I-7013

Available soon

I-7014D



I-7014D:

Analog/Transmitter Input with LED Display

- Analog input type: V, mV, mA
- Input Range: $\pm 150\text{mV}$, $\pm 500\text{mV}$, $\pm 1\text{V}$, $\pm 5\text{V}$, $\pm 10\text{V}$, $\pm 20\text{mA}$
- Sampling rate: 10 samples/sec.
- Isolated loop power: $+15\text{Vdc}$
- Input Linear Scaling
- LED indicator: 4 1/2 digit readout

I-7016



I-7016D



I-7016/7016D:

Strain Gauge Input Module

- Resolution: 16 bit
- Channel: 2 channel
- Input type: mV and mA
- Input range: $\pm 15\text{mV}$, $\pm 50\text{mV}$, $\pm 100\text{mV}$, $\pm 500\text{mV}$, $\pm 20\text{mA}$
- Isolation: 3000V
- Sampling rate: 10Hz

I-7016P



I-7016PD



7016P/7016PD:

Strain Gauge Input Module

- Channel: 1 channel
- Other Spec. is the same as I-7016

i-7000 Analog I/O Modules

SERIES

I-7017



I-7017:

8-channel Analog Input Module

- Input Range : ± 20 mA
- Channels:
 - 6 differential, 2 single-ended or
 - 8 differential (jumper selectable)
- Sampling rate: 10 samples/sec total

I-7017F



I-7017F:

8-channel Analog Input Module

- High speed version of I-7017
- Can be configured as 12-bit resolution and 60Hz sampling rate
- Other spec. is the same as I-7017

I-7017R



NEW!!

I-7017R:

8-channel Analog Input Module

- Input Channel : 8 differential input channels
- Input Type : mV, V, mA
(with external 125 Ohms resistor)
- Sampling Rate : 10 samples/second total
- -3dB BandWidth : 15.7Hz
- Accuracy : $\pm 0.1\%$
- Common Mode Rejection : Typical 86dB
- Voltage Input Impedance : $> 2M$ Ohms
- Overvoltage Protection : 240 VRMS
- Isolation Voltage : 3000Vrms

I-7017C



I-7017C:

8-channel Analog Input Module

- Input Range : **Only Current Input (± 20 mA)**
- Channels :
 - 6 differential, 2 single-ended or
 - 8 differential (jumper selectable)
- Sampling rate : 10 sample/sec total

I-7017RC



NEW!!

I-7017RC:

8-channel Analog Input Module

- Input Type : **Only Current Input (± 20 mA)**
- Other Spec. as the same as I-7017R

i-7000 Analog I/O Modules

SERIES

I-7018



I-7018:

8-channel Thermocouple Input Module

- Input type: same as I-7011
- Input Range: same as I-7011
- Channels:
 - 6 differential, 2 single-ended or
 - 8 differential (jumper selectable)
- Sampling rate: 10 samples/sec total

I-7018P



I-7018P:

8-channel Thermocouple Input Module

- same as 7018
- Add two thermocouple input type: L, M

I-7018R



I-7018R:

8-channel Analog Input Module

- Input Type: mV, V, mA, Thermoconple
- Thermoconple Type: I, K, T, E, R, S, B, N, C, L, H
- Sampling Rate: 10 samples/Second total
- -3d B BandWidth: 15.7Hz
- Accuracy: +/- 0.1%
- Common Mode Rejection: Typical 86dB
- Voltage Input Impedance: >2M Ohms
- Overvoltage Protection: 240 VRMS
- Isolation Voltage: 3000 VRms

NEW!!

I-7018BL



I-7018BL:

8-channel Analog Input Module

- Add Break Line detection function
- Other Spec. as the same as I-7018

NEW!!

I-7019



I-7019:

8-channel Universal Analog Input Module

- Input Type: mV, V, mA, Thermoconple, RTP
- Sampling Rate: 10 samples/Second total
- -3d B BandWidth: 15.7Hz
- Accuracy: +/- 0.1%
- Common Mode Rejection: Typical 86dB
- Voltage Input Impedance: >2M Ohms
- Overvoltage Protection: 240 VRMS
- Isolation Voltage: 3000 VRms

Available soon

i-7000 *Analog I/O Modules*

SERIES

I-7021



I-7021:

Analog Output Module

- Resolution: 12 bit
- Analog output type: mA, V
- Output Range: 0-20mA, 4-20mA, 0-10V
- Accuracy:
 - +/-0.1% or FSR for current output
 - +/-0.2% or FSR for voltage output
- Programmable output slew rate:
0.0625 to 64V/sec. 0.125 to 128mA/sec.

I-7021P



I-7021P:

Analog Output Module

- Resolution: 14 bit
- High precision version of I-7021
- Current output 0-20mA, 4-20mA
- Voltage output 0-10V

I-7022



I-7022:

2-channel Analog Output Module

- Resolution: 12 bit
- Analog output channel: 2
- Current output: 0-20mA, 4-20mA
- Voltage output: 0-10V
- Channel to channel isolated

I-7024



I-7024:

4-channel analog output Module

- Resolution: 14 bit
- Current output 0-20mA, 4-20mA
- Voltage output: +/-10V, 0-10V, +/-5V, 0-5V
- Programmable output slew rate

i-7000 *Digital I/O Modules*

SERIES

I-7041



I-7041D



I-7041:

Isolated Digital Input Module

I-7041D:

I-7041 with LED Display

- Input: 14 single-ended
high level: 4V to 30V.
Low level: 0 to 1V.
- Isolation voltage: 3750V rms
- Input resistance: 3K Ω , 1/4W

I-7042



I-7042D



I-7042:

Isolated O.C. Output Module

I-7042D:

I-7042 with LED

- Digital Output channels: 13
Open collector to 30V, 100mA max load
- Isolation voltage: 3750V rms
- Direct drive power relay module

I-7043



I-7043D



I-7043:

Nonisolated O.C. Output Module

I-7043D:

I-7043 with LED

- Digital Output channels: 16
Open collector or 30V, 100mA max load
- Direct drive power relay module

I-7044



I-7044D



I-7044: Isolated Digital Input & Output Module

I-7044D: I-7044 with LED Display

- Input: 4 single-ended
high level: 4V to 30V.
Low level: 0 to 1V.
- Input isolation voltage: 3750V rms
- Digital Output channels: 8
Open collector to 30V.
375mA max per channel

i-7000 **Digital I/O Modules**

SERIES

I-7045

I-7045D



Available soon

I-7045: 14 channel Isolated Digital Output Module

I-7045D: I-7045 with LED Display

- Channels : 14
- External Voltage : 10 to 30V max.
- Output current : 500mA per channel
- Short Circuit Protection
- Isolation Voltage : 3750V
- Direct drive power relay module
- Power consumption: 0.5W

I-7050

I-7050D



I-7050: Nonisolated Digital I/O Module

I-7050D: I-7050 with LED Display

- Digital input channels: 7
- Level: TTL,
- Logic level 0: +1V max.
- Logic level1: +3.5 ~ +30V
- Digital output channels: 8
- Open collector to 30V, 30mA max. load
- Power dissipation: 300mW

I-7050A

I-7050AD



I-7050A: Digital I/O Module (Current Source)

I-7050AD: I-7050A LED Display

- Digital Output Channels:7
- Logic level 0: 1V
- Logic level 1: 3.5V~30V
- Digital Output Channels:8
- Open Collector to 30V, 50mA(max). load

I-7051

I-7051D



Available soon

I-7051: Isolated Digital Input Module

I-7051D: I-7051 LED Display

- Digital Output Channels: 16
- Isolation voltage: 3750 Vrms
- Digital input status:
- Dry contact:
 - logic level 0: close to GND
 - logic level 1: open
- Wet contact:
 - logic level 0: +3V max
 - logic level 1: +10V to +50V
- Effective distance for dry contact: 500m max

I-7052

I-7052D



I-7052: Isolated Digital Input Module

I-7052D: I-7052 with LED Display

- Input: 6 differential and 2 single-ended
- high level: 3.5V to 30V.
- Low level: 0 to 1V.
- Isolation voltage: 5000V rms
- Input resistance: 3K%, 1/4w

i-7000 Digital I/O Modules

SERIES

I-7053



I-7053D



I-7053:

Nonisolated Digital Input Module

I-7053D:

I-7053 with Display

- Input: 16 single-ended
high level: 4V to 30V.
Low level: 0 to 2V.

I-7055: Isolation Digital Input Module

I-7055D: I-7055 LED Display

- Digital Input Channels: 8
- Digital Input status
Dry contact: logic level 0: close to GND
logic level 1: open
Wet contact: logic level 0: +3V max
logic level 1: +10V to +50V
Effective distance for dry contact: 500m max
- Digital Output channels: 8
- Open collector to 30V, 500mA max. load
short circuit protection
- Optical Isolation: 3750VDC

I-7055



I-7055D



Available soon

I-7058



Available soon

I-7058:

8-channel Isolated Digital Input Module

- Digital input channel : 8
- Input type : differnetial
- Input Voltage
Logical High : AC/DC 80V mini
Logical Low : AC/DC 30V max.
- Maxiumum Input Voltage :AC/DC 250V
- AC frequency : 45Hz(min.)
- Isolation :5000Vrms

I-7060



I-7060D



I-7060:

Relay Output & Isolated Digital Input Module

I-7060D: I-7060 with LED Display

- Input: 4 single-ended
high level: 4V to 30V.
Low level: 0 to 1V.
- Isolation voltage: 3750V rms
- Input resistance: 3K Ω , 1/4w
- Output: 4-channel relay

I-7063



I-7063D



I-7063: Power Relay & Isolated Digital Input Module

I-7063D : I-7063 with LED Display

- Input : 8 single-ended
high level: 4V to 30V.
Low level: 0 to 1V.
Input resistance: 3K ohm
Isolation voltage: 3750Vrms
- Output: 3 Form A power relay
Contact rating: 5A@250VAC / 5A@30VDC

i-7000 *Digital I/O Modules*

SERIES

I-7063A



I-7063A: AC-SSR & Isolated Digital Input Module

I-7063AD: I-7063A with LED Display

- Digital input spec. is the same as I-7063
- Output: 3 AC-SSR , Normal open
- Contact rating: Load voltage: AC 24 to 265Vrms
- Leakage current: 1.5mArms
- Max load current: 1.0Arms

I-7063B



I-7063B: DC-SSR & Isolated Digital Input Module

I-7063BD: I-7063B with LED Display

- Digital input spec. is the same as I-7063
- Output: 3 DC-SSR , Normal open
- Contact rating: Load voltage: DC 3 to 30V
- Leakage current: 0.1mA
- Max load current: 1.0A

I-7065



I-7065: Power Relay & Isolated Digital Input Module

I-7065D: I-7065 with LED Display

- Input : 4 single-ended
- high level: 4V to 30V.
- Low level: 0 to 1V.
- Input resistance: 3K ohm
- Output: 5 Form A power relay
- Contact rating: 5A@250VAC
- 5A@30VDC

I-7065A



I-7065A: AC-SSR & Isolated Digital Input Module

I-7065AD: I-7065A with LED Display

- Digital input spec. is the same as I-7065
- Output: 5 AC-SSR , Normal open
- Contact rating:
- Load voltage: AC 24 to 265Vrms
- Leakage current: 1.5mArms
- Max load current: 1.0Arms
- Isolation voltage: 3750Vrms

i-7000 *Digital I/O Modules*

SERIES

I-7065B



I-7065B: DC-SSR & Isolated Digital Input Module

I-7065BD: I-7065B with LED Display

- Digital input spec. is the same as I-7065
- Output: 5 DC-SSR , Normal open
- Contact rating:
- Load voltage: DC 3 to 30V
- Leakage current: 0.1mA
- Max load current: 1.0A
- Isolation voltage: 3750Vrms

I-7066



I-7066: Photo Mos Relay Output Module

I-7066D: I-7066 with Display

- 7 form A Photo Mos Relays
- Switch up to Max. 0.13A at Max. 350 VAC
- 5,000V Optional Isolation

I-7067



I-7067: Relay Output Module

I-7067D: I-7067 with Display

- Relay output: 7 Form A
- Ratingf: AC: 125V @0.5A
- DC: 24V @2A

Counter Modules

I-7080



I-7080: Counter/Frequency Input Module

I-7080D: I-7080 with LED Display

- Counter input: 2 independent 32 bit counter
- Frequency input: 100K Hz max
- Input: 3750V isolated or non-isolated
- Non-isolated programmable threshold value
- Programmable digital noise filter
- LED indicator: 5 digit readout (I-7080D)

i-7000 *Relay Module*

SERIES



Relay Modules

RM-10X Series Relay Module

- 16A, 1 form C Relay
- RM-104/RM-108/RM-116

RM-20X Series Relay Module

- 5A, 2 form C Relay
- RM-204/RM-208/RM-216

DN-PR4:

- Channels: 4
- Relay Type: Form A
- Load Voltage: 50~250VAC/5A

DN-SSR4:

- Channels: 4
- Relay Type: Form A
- Load Voltage: 50~250VAC/4A

Power Supply

ACE-540A/DIN-540A:

- Input Voltage: 85~264VAC
- Input Frequency: 47~63Hz
- Output Volotage: +24VDC
- Output Current: 1.7mps
- Output power Range: 48 Watetts

KA-52F/DIN-KA52F

- Input Voltage: 100~250VAC
- Output Voltage: -24VDC/1.05Amps

PWR-24/110

- Input Voltage: 110VAC
- Input Frequency: 60Hz

PWR-24/220

- Input Voltage: 220VAC
- Input Frequency: 50Hz
- Output Voltage: +24VDC

PWR-24/230

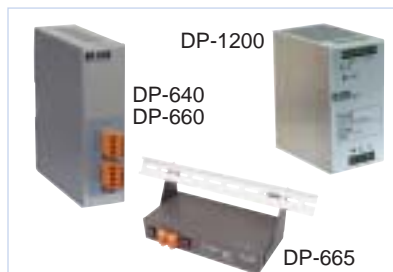
- Input Voltage: 230VAC
- Input Frequency: 50Hz
- Output Voltage: +24VDC

DP-640/DP-660/DP-665

- Input voltage: 90VAC to 264VAC
- Input frequency: 47Hz to 63Hz
- DC Outputs:
- +24V/1.7A (DP-640)
- +24V/1.7A +5V/0.5A (DP-660/DP-665)

DP-1200

- Input voltage: 85VAC to 264VAC
- Input frequency: 47Hz to 63Hz
- Input Outputs: 24V/5A



i-7000 *Industrial LCD Display*

SERIES

MMICON



Man Machine Interface

MMICON

- Man-Machine interface Control Board
- 240x64 dots Graphics LCD interface
- LCD display area: 107.97x77mm
- 4x4 keyboard interface
- RS-232/RS-485 interface

Touch 200 Touch 250



Touch 200

- 5.7" Black & White Touch Panel Display
- RS-232 / RS-485 Interface
- Connect to I-7188, I-8000, PC, or other Embedded Controller

Touch 250

- 9.4" high contrast blue mode Touch Panel
- RS-232 / RS-485 Interface
- Connect to I-7188, I-8000, PC, or other Embedded Controller

i-7000 *Radio Modems and Antennas*

SERIES



SST-2450:

- Based on DSSS and RF technology
- Operating in 2410~2472MHz, ISM band
- Number of channels: 16
- Transmit Power: 0.05W
- Communication distance: 300M
- CE Report No:02AH055E1
- FCC ID:Q6MIT450000

SST-900EXT:

- Based on DSSS and RF technology
- Operating in 902~928MHz, ISM band
- Number of channels: 8
- Transmit Power: 0.1W
- Communication distance: 800M (obstacle free environment)



ANT-3

1 Km external antenne for SST-2450 (Directional)

ANT-8

1 Km external antenne for SST-2450 (Omnidirectional)

ANT-12P

5 Km external antenne for SST-2450 (Directional)

ANT-900A

1 Km external antenne for SST-900ext



Accessories

I-950-ENC Industrial Enclosure

- IP66 Industrial enclosure
- Built-in DIN-Rail for easy mounting
- Seal design provides anti-leak protection
- Dimensions: 247x180x90mm

I-3625-ENC

- Dimension: 360 x 254 x 165mm

Accessories



Terminal Block cover

CA-5810

- For 10 pin 5.08mm pitch

CA-3813

- For 13 pin 3.81mm pitch
And 14 pin 3.5 mm pitch

CA-0945

- For 9 pin 3.81 mm pitch with
RJ-45 connector



Relay Modules

RM-38 Series Relay Module

- 6.2 mm wide
- Contact configuration : 1 co (SPDT)
- Load Voltage : 12~240VAC/6A

RM-48.61/RM-48.62 Series Relay Module

RM-48.61

- 15.5 mm wide,
- Contact configuration : 1 co (SPDT)
- Load voltage : 12~240VAC/16A

RM-48.62

- 15.5 mm wide
- Contact configuration : 2 co (DPDT)
- Load voltage : 12~240VAC/10A

Installation



Ordering Information

- RM-38 SPDT (5 piece in one box)
- Option: 20-way jumper link for RM-38
- RM-48.61 RM-48 SPDT (4 piece in one box)
- RM-48.62 RM-48 DPDT (4 piece in one box)
- Option: 18-way jumper link for RM-48 series

i-7000 *Learning Kit*

SERIES



IKIT-02: **Analog Learning Kit**

Purpose:

To use the RS-485 network to acquire analog signal

Including: I-7520x1
I-7012Dx1

IKIT-04: High Speed High Number Digital Control Kit

Purpose:

To use the RS-485 network to control high number DI/O in high speed mode (16,000 channels per second)

Including: I-7520x1 I-7053Dx1
I-7043Dx1

IKIT-06: Professional Kit

Purpose:

This kit is designed for engineers to learn the implementation of network data acquisition and control systems.

Including: I-7520x1 I-7060Dx1
I-7012Dx1 I-7021x1



IKIT-08: Touch Panel Learning Kit

Purpose:

Using I-7188 embedded controller and the touch Panel to develop a digital control system

Including: I-7188D/DOS; I-7060D; Touch 200; Download cable; Power Supply; I-7188 manual; 7188 Demo Programs, utility disk of ROM-DOS; NAPDOS Disk 14

IKIT-01: **Digital Control Learning Kit**

Purpose:

To use the RS-485 network to control digital I/O module

Including: I-7520x1
I-7060Dx1

IKIT-03: **RS-485 Network Learning Kit**

Purpose:

To use the RS-485 network to link PC and PLC via I-7520 RS-232 to RS-485 converter

Including: I-7520x3

IKIT-05: High Speed High Number Data Acquisition Kit

Purpose:

To use the RS-485 network to acquire high number analog input channel in high speed mode. (I-7017: 1704 channels/sec. I-7018: 1100 channels/sec.)

Including: I-7520x1 I-7017Fx1
I-7018Px1

IKIT-07: Embedded Controller Kit

Purpose:

Using I-7188 embedded controller to develop a digital control system

Including: I-7188D/DOS; I-7060D; Download cable; Power Supply; I-7188 manual; 7188 Demo Programs, utility disk of ROM-DOS; NAPDOS Disk 14

Note 1: Each kit includes NAP7000 Driver Pack, NAP7000S Manual, DB-9 to DB-9 cable, Power adapter.

Note 2: There are 8 different learning kits for the user to learn the basic skill of network data acquisition and control modules. The user can use I-7000 modules to replace some PLC application system. It is also very easy to use analog modules to implement a network data logger.

Note 3: NAP7000 Driver Pack includes NAP7000S, NAP7000V, NAP7000D, NAP7000P, NAP7000X. The user can use NAP7000 Driver Pack to develop his own application program for the learning kit.

i-8000 **Learning Kit**

SERIES



IKIT-20

Purpose:

Using the I-8417 embedded controller with ISaGRAF to develop digit control system.

Including: I-8417 + I-8055 + ISaGRAF-80



IKIT-21

Purpose:

Using the I-8437 embedded controller with ISaGRAF to develop digit and analog control system.

Including:

I-8437 + I-8055 + I-87017 + ISaGRAF-80



IKIT-22

Purpose:

Using I-8411 embedded controller to develop a digital control system.

Including: I-8411 + I-8055



IKIT-23

Purpose:

Using I-8431 embedded controller to develop a digital control system.

Including: I-8431 + I-8055 + I-87017



Training Box

Application:

Internal Training of Company, Sales tool, Exhibition Demo

Includes: I-7188D, 7013D, 7017F, 7021, 7060D, 7000 Driver Pack.

Note: Touch 200 (for Training Box II only)



Domo Board

Application:

Exhibition Demo, Product Display

Demo Board I: Includes: I-7520, I-7060D, I-7012D, 7013D, 7044D, 7000 Driver Pack

Demo Board II: Includes: I-7188, I-7060D, I-7012D, 7013D, 7044D, 7000 Driver pack

More I-8000 training box will be available