



I-7000 Remote I/O Module Profiles



I-7000 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 modules is backward compatible to ADAM, Nudam, and 6B of Analog Device.

"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.

Intelligent design



I-7000 modules provides signal conditioning system monitoring, alarm signal output, safe value setting

I/O range programmable

I/O type and range of modules can be 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 Provides Module 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 fails. The host watchdog monitors the host controller (PC or PLC). The output of module can go to the safe Value State if the host fails.

Stand alone Control

The user may use the I-7188 embedded control module to control the I/O ports of I-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.

Wide Range Power Input

The I-7000 requires 10V to 30V unregulated DC power supply.

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 the signals.

Host Swap Design

The Plug-in terminal blocks are used in I-7000 modules. The user may hot-swap the modules directly and lower the maintenance effort.

RS-485 Industrial Multi-Drop network

The I-7000 series modules use the industrial EIA RS-485 communication protocol to transmit and receive data at high speed over long distances. All modules have been designed to be easy to interface to the popular computer and controller. All communication to and from the modules is performed with printable ASCII characters. All modules use high speed photocouple to prevent common mode problem. Internal surge protection circuitry is used on data lines to protect the modules from spikes.



RS-232 to RS-485 conversion

The user can use the I-7520 RS-232/RS-485 converter, ISA-7520R or PCI-7520AR to change standard RS-232 signals into isolated RS-485 signals. ISA-7520R is an ISA bus RS-485 board and the function is the same as I-7520R. PCI-7520AR is a PCIbus RS-485/RS-422 board and the function is similar to I-7520AR. RS-485 bus control is transparent to the user and the user doesn't have to understand the real operation. Host software is simple written in half-duplex RS-232 like.

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 those device is 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 handle 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 don't have to open the plastic case of I-7520 to select a correct dip switch for different baud rate and data format.

Communication protocol

All I-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 user can use high-level language, such as C, VB, Delphi ... to write their application programs. Some famous packages can control I-7000 Directly. Such as Labview, HP VIEW, Testpoint, IsaGraf.... etc.

Network can be expandable

I-7510 repeater is more than a pure isolated repeater. "Self Tuner" ASIC is inside. It has some outstanding features, such as 3000V isolation, 115K maxi. speed, variable baud and data format, Each I-7510 repeater can let you add 256 modules I-7000 modules to the network or extend the network to another 4,000ft long. Logically you can access 2,056 modules in one RS-232 port. Physically the user should consider the network length and the hardware loading effect. The user should use I-7510 to isolate different groups to avoid high voltage hitting the communication wires.