

ISORACK PRODUCTS

FEATURES

- Economical, with or without Redundancy
- Capacity of 40 to 1280 analog or Digital channels (single 21" unit)
- All channels sampled synchronously within 1mSec
- Multiple network protocols supported
- Communications can support one or two Host Units (plc's, Computers, Scada Systems)
- High 16bit analog resolution
- Highly stable Apix technology A/D Conversion
- Wide range 9-36 VDC power input
- Low distributed power, no fans, no central supply
- Each compact 3U ISORACK unit has only 5.25" depth
- Passive backplane, connectors only
- Extended -40 to 85 °C Temperature Operation

PRODUCT OVERVIEW

This Isorack product family combines the Isodaq modules with a flexible communications interface to achieve both high performance and low cost I/O functions.

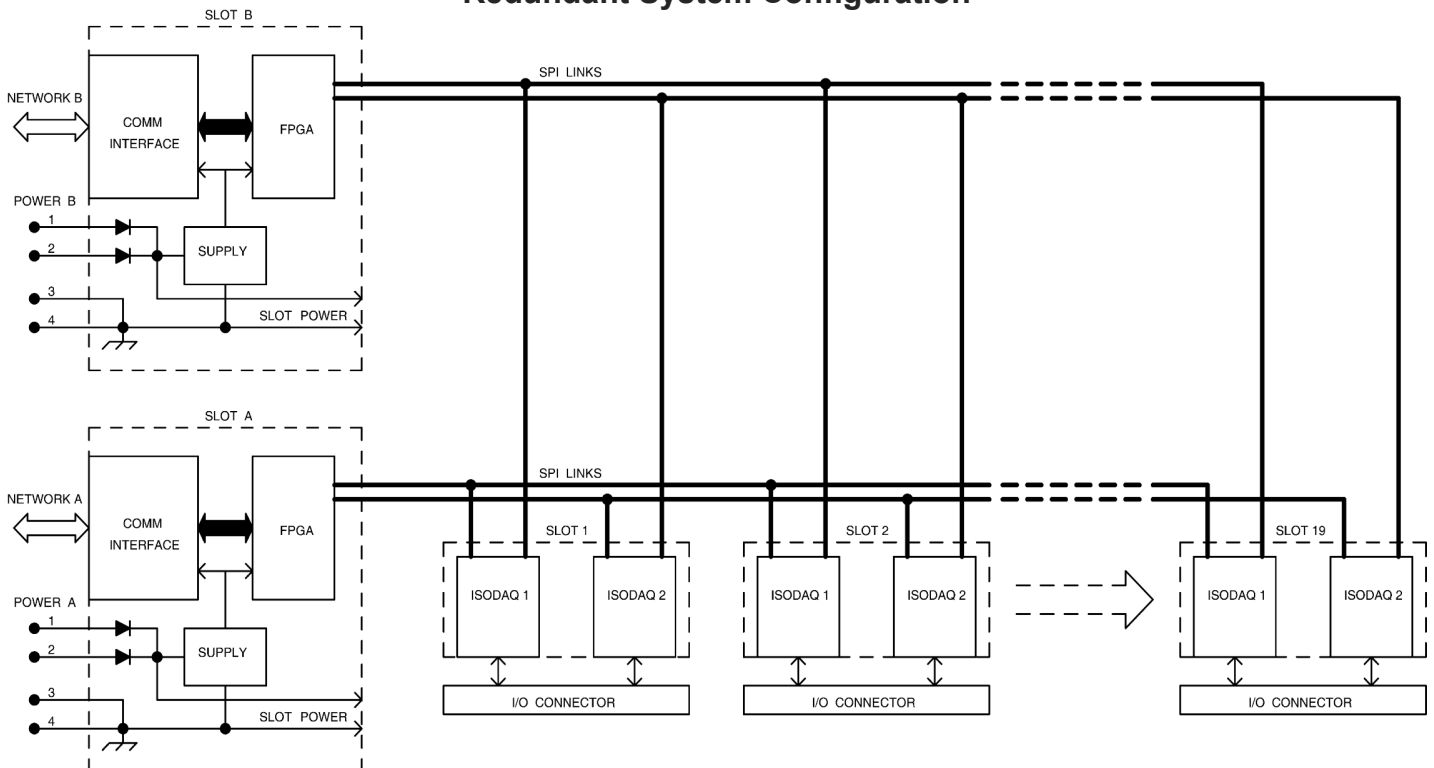
Fully redundant systems may be configured. This includes both Hosts and I/O.

Three rack sizes with 5, 10 and 21 slots are available. One slot is assigned to a communications interface card, leaving 4, 9 and 20 slots for I/O carrier cards. Two communications interface cards are required for redundancy. All Slots Communicate via separate SPi communication Links to a single or both Communication Boards

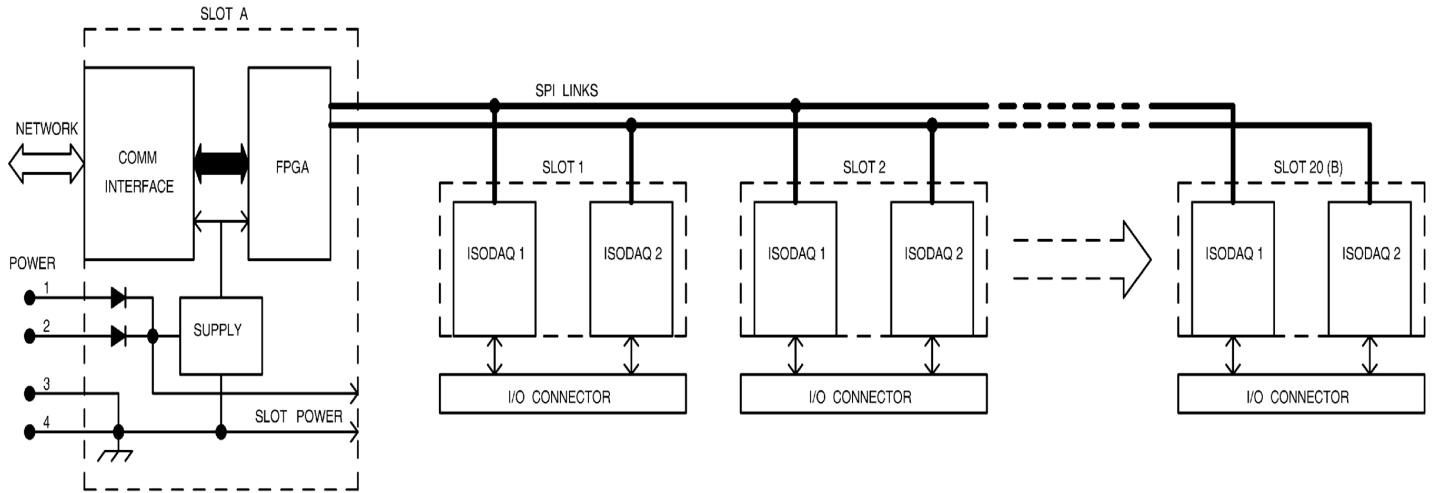
A multiprotocol communications interface card automatically scans the I/O at a user settable rate of 50 to 1000 Hz. All channels are sampled synchronously.



Redundant System Configuration



Standard System Configuration



SPECIFICATIONS

Maximum Ratings

Power Supply Voltage	40 VDC
Storage Temperature	-55 to 125 Deg C

Power Requirements

Supply Voltage	9 to 36 VDC
Max Power requirement	12 – 25 – 50 watts (5 – 10 – 21 slot racks)

Emissions & Immunity

Complies with the requirements of IEC61326-1 in particular:

IEC61000-3-2	Class B Emissions
IEC61000-4-2	Electrostatic Discharge
IEC61000-4-4	Fast Transient Burst
IEC61000-4-5	Surge Immunity
IEC61000-4-6	Conducted RF

Environmental & Mechanical

Operating Temperature	-40 to 85 °C (Optional)
Relative Humidity	< 95 % Non Condensing
Height	5.25" (133 mm)
Depth	5.25" (133 mm)
Width	6.24" (159mm), 5slot 10.24" (260 mm), 10slot 19.0" (483 mm), 21slot

Communication Interface

Networks supported	Modbus TCP Modbus RTU Profinet Profibus DP Canopen Devicenet EtherNet/IP USB
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Backplane	0.12" (3.2mm) thick FR4 meets UL94V-0
Backplane connectors	CPCI type as per IEC61076-4

Carrier Card Configuration

The wide variety of ISODAQ modules are interfaced with the ISORACK chassis via several "Carrier Cards". These differ in terms of :

- Channel capacity (8,16,32 or 64 either analog or digital I/O)
- Field termination (16, 34 or 68 Pin connectors)
- Electrical immunity , IEC61000 series specs up to level 4 (4KV)
- Communication interface (RS-485 or SPi for high speed / redundancy)
- Optional LED indicators for Digital I/O

General Guidelines

1) For highest isolation and immunity performance the DAQ-C1 & C2 Carriers are most suitable. In particular:

- DAQ-C1RTU and DAQ-C2RTU

Both provide a Modbus RTU RS-485 isolated interface and are intended for the harshest industrial environments due to outstanding noise and overvoltage immunity, such as 250Vrms continuous normal mode or 4KV peak common mode. Only 8 channel quad isolated ISODAQ modules with are used with these Carriers.

- DAQ-C1SPi and DAQ-C2SPi

Same capabilities as the C1RTU & C2RTU Carriers but with dual redundant SPi high speed links for higher sampling rates and redundant I/O architectures. Many fieldbus networks are supported via several versions of Communications Interface Cards.

2) Higher channel capacity with slightly relaxed immunity is provided in the DAQ-C3RTU and DAQ-C3SPi Carriers.

Most ISODAQ modules with 8 , 16 or 32 channels are accommodated. As before, the SPi version allows higher sampling rates, redundancy and network flexibility.

3) Even higher channel count using 2 ISODAQ modules per Carrier Card is possible with the DAQ-C4SPi and DAQ-C5SPi with just a minimal trade off in normal mode noise immunity.

- The DAQ-C4SPi version accepts most 8 channel ISODAQ SPi modules and provides for direct field wiring termination on the front panel 34pin plug connector .
- A 68pin SCSI 3 shielded connector on the DAQ-C5SPi carrier interfaces two ISODAQ modules, each with 34 I/O pi Up to 32 analog or digital channels per module are allowed, making a 1280 channel system possible in one 21 slot rack , with 1KHz synchronized channel sample rate.
The field I/O signals are connected to a separate DIN mount termination board and are fed to the Carrier Card using standard shielded 68wire SCSI cables of various lengths, as required.

ISODAQ / CARRIER CARD CONFIGURATION GUIDE

ISODAQ TYPE	Description	DAQ-C1RTU	DAQ-C1spi	DAQ-C2RTU	DAQ-C2spi	DAQ-C3RTU	DAQ-C3spi	DAQ-C4spi	DAQ-C5spi
ANALOG INPUTS									
DAQ8-80mV4-2RTU	Eight (8) \pm 80mV Input channels	*	*			*	*	*	*
DAQ8-10V4-2RTU	Eight (8) Voltage (\pm 10V) Input channels	*	*			*	*	*	*
DAQ8-100V4-2RTU	Eight (8) Voltage (\pm 100V) Input channels			*	*				
DAQ8-20mA4-2RTU	Eight (8) mA (4-20mA) Input channels	*	*			*	*	*	*
DAQ8-TC4-1RTU	Eight (8) Thermocouple Input channels	*	*						
DAQ8-640R4-2RTU	Eight (8) Resistance (0-640 Ohms) Input channels					*	*		*
DAQ32-10V3-2RTU	Thirty two (32) Voltage (\pm 10V) Input channels					*	*		*
ANALOG OUTPUTS									
DAQ8-20mA/10V3-2RTU	Eight (8) mA (4-20mA) / (8) Voltage(\pm 10V) Outputs					*	*		*
DAQ16-10V3-2RTU	Sixteen (16) Voltage (\pm 10V) Outputs					*	*		*
DAQ32-10V3-2RTU	Thirty two (32) Voltage (\pm 10V) Outputs					*	*		*
DIGITAL INPUTS									
DAQ8-24VDin4-2RTU	Eight (8) 24V DC/AC Digital Inputs	*	*					*	*
DAQ16-24VDin4-2RTU	Sixteen (16) 24V DC/AC Digital Inputs					*	*		*
DAQ8-240VDin4-2RTU	Eight (8) 90-240VAC or 100-240VDC Digital Inputs			*	*				
DAQ32-24VDin3-2RTU	Thirty two (32) 24V Digital Input channels					*	*		*
DIGITAL OUTPUTS									
DAQ8-24VDout4-2RTU	Eight (8) 24V DC/AC Photo Relay Outputs	*	*					*	*
DAQ16-24VDout4-2RTU	Sixteen (16) 24V DC/AC Photo Relay Output					*	*		*
DAQ8-240VDout4-2RTU	Eight 90-240VAC Triac Outputs			*	*				
DAQ16-24VDout3-2RTU	Sixteen (16) 24V Open Drain Outputs (1 Amp) with readback					*	*		*
BI-DIRECTIONAL I/O									
DAQ8-24VDio4-2RTU	Eight (8) 24V Programmable DC/AC, IN/OUT Channels	*	*					*	*
DAQ8-240VDio4-2RTU	Eight (8) 90- 240VAC Programmable AC, IN/OUT Channels			*	*				
DAQ4/4-20mA-2RTU	Four (4) (4-20mA) Inputs + Four (4-20mA) Outputs	*	*					*	*
DAQ32-TTL-2RTU	Thirty two (32) TTL digital I/O					*	*		*

INSTALLATION

Enclosure

All 3 racks are of heavy duty extruded aluminum construction, designed to hold Apix half size (80x100mm) eurocards. The 21 slot version will fit standard 19 inch wide cabinets, whereas the 5 and 10 slot models are intended to be rear panel mounted or DIN rail mounted (with an appropriate adapter).

The Outline drawing details the mechanical dimensions and mounting hole positions

