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Technology for Productivity



3U Ethernet Card Cage

ETHERNET I/O SYSTEM

3U Ethernet Card Cage provides high density networked I/O and distributed control in flexible customer designed modules. Each node contains industrial I/O, local logic with Ethernet connectivity to a master control PC using industry standard master/slave protocol. 3U Ethernet Card Cage uses standard, high density I/O cards, packaged in an enclosure with customer specific signal conditioning and distribution. Web browser based diagnostics and data acquisition, allows for fast debug of connectivity and signals. I/O includes a selection of digital, analog and interlocks, with 4 serial communication ports per node.

Features & Benefits

- Uses standard 100BT Ethernet, with standard Modbus/TCP protocol
- 5 ms response time from all I/O
- Adds serial COM ports around the tool, where needed (Ethernet to serial)
- Each node has web browser interface for configuration, diagnostics
- Distributed logic using JavaScript® interpreter
- Peer-to-peer I/O monitoring over Modbus/TCP
- LED indication for all digital I/O
- Modular solution with replaceable I/O cards
- High density, 48 points per card (digital and analog)
- Signal distribution specified by customer for cleanest cabling solution
- Package based upon several existing designs, or new form factor
- Populate some cards for specific applications only
- Include additional, unpopulated slots for future expansion

Control & Information Technology

WWW.MKSINST.COM

Configuration

Each node contains a network control card, I/O cards and signal distribution. Control interface is 100BT Ethernet, with Modbus/TCP protocol standard. Other Ethernet protocols available upon request. Use standard web browser for configuration, diagnostics and immediate manual control of all I/O. Embedded HTTP server, supporting static content (HTML, GIF, Java script, etc.) and dynamic content (HTML, XML)

I/O for each node is configurable through the use of off-the-shelf 3U I/O cards enclosed in a standard or customer specific card cage with signal distribution. Convenient diagnostics are available through a standard web browser and front panel LED indicators for Digital and Interlock.



Currently Available I/O cards

- DIDO, 48 digital in/out points, all isolated, solid-state based
- AIAO, 32 analog in, 16 analog out, 12 bit, single-ended
- COMBO, 24 DIDO, 8AI, 8AO
- Interlock, single and dual slot options, 40 – 76 relays with trace configurable logic
- Total of (4) RS-232/485 ports per node, included with network communication card

Control Performance using Modbus/TCP

- 5 msec response time of I/O
- Distributed logic using JavaScript interpreter, optional
- Peer-to-peer I/O monitoring, optional

Data Collection and Analysis

- Collect and analyze critical sensor readings over a period of time
- Available for graphical and CSV file access from host PC (web browser)
- Continuous collection using TOOLweb® XML protocol

Netcom Card

The Netcom card contains all local intelligence, manages Ethernet connectivity and provides 4 remote serial ports. The Netcom card, combined with 3U I/O cards and card cage, comprise an entire 3U Ethernet Card Cage system.

Specification	#	Details
Physical		100mm x 160mm; 3U x 4HP eurocard
Power		18 to 30 VDC, 300mA max
Processor		Motorola Coldfire processor, 512KB Flash, 8MB SDRAM, 2MB external Flash
Ethernet Ports	2	Single IP, with integrated switch
Serial Monitor Port	1	RS232, front connector, D-sub 9 male
Serial Ports	4	RS232/485, software selectable, rear J2 connector
LED - REM	1	Status of remote control connection
LED - LOC	1	Status of local unit
LED - Front Ethernet	2	Status of front ethernet port
LED - Rear Ethernet	2	Status of rear ethernet port

3U Ethernet Card Cage System Configuration

NetCom Ethernet Communication Card + I/O and Interlock Cards → 3U Ethernet Card Cage I/O System (EXPANDABLE)



CPU, Ethernet, Switch and 4 SCOM ports



48 DIDO



3U module, with side(s) and rear signal distribution



32 AI, 16 AO



3U module, with rear signal distribution



24 DIDO, 8AI, 8AO



Interlock w/ readout

6U module, with side(s) and rear signal distribution

Ordering Information

			Analog		Digital
Part Number	**I/O Type**	**Description**	**Input**	**Output**	**I/O**
AS00478-01	Netcom	Card, Netcom Controller, 3U, 4 serial ports (RS232/485), 1 monitor port (RS232)			
AS00482-02		Card Cage, 3U Ethernet Card Cage with rear distribution, 4 I/O slots, 2 D sub-78 pin connectors per I/O card. Dimensions are 9 x 9 x 7 inches (approx).			
		I/O Cards			
CDN491-C-E	DIDO	Card, DIDO 48 active low, 3U	0	0	48
CDN494-C-E	COMBO	Card, DIDO 24 active low, AI32, AO16, 12 bit, single-ended, 3U	8	8	24
CDN496-C-E	AIAO	Card, AI32, AO16, 12 bit, single-ended, 3U	32	16	0
CDN500-x	Interlock	Card, Interlock, 36-68 relays			24



Card Cage — Front View

Four I/O slots



Card Cage — Rear Signal Distribution

Two I/O connectors per card

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3U Ethernet Card Cage - 1/08

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