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MaxArray FC
MaxArray LVD/SE
8 - Bay

User Manual

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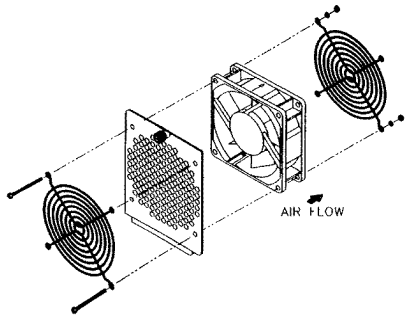
Sales Represenative	Telephone/Fax/Email

Warning: Removing the fan on a running unit will cause ventilation problems. To ensure that this does not occur, always have a spare fan assembly available.



To install a replacement fan

1. Slide one end of the bracket into the rear enclosure fan slot.

2. Connect the fan cable to the enclosure. Make sure the connection is firmly seated.

3. Make sure there is nothing blocking the fan blades that could cause interference.

4. Swing the bracket shut and tighten the thumbscrew.

If the fan still does not run properly, contact a Rorke Data service representative.

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1-Introduction

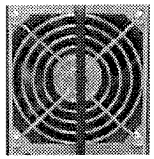
Features

The 19" rackmount or modular tower enclosure is ideal for mounting up to eight 3-1/2" full-height or half-height form factor fibre channel or SCSI hard drives.

Each unit is shipped complete with these features and items:

- Jumper selectable ID's
- Eight hot-swappable locking canisters with key
- Removable N+1 power supplies
- Hot-Swappable ball-bearing fan
- Dual channel SCSI with single channel capability
- Front panel LED status indicators for unit power, individual device power, and device fault
- Dual loop fibre channel with loop expansion capability
- Basic SCSI units support LVD and SE SCSI
- Audible alert and front panel LED warning indicators for fan speed, temperature, and power
- Front mounted handles for easy serviceability
- Fibre channel or SCSI SCA backplane design with rear mounted I/O connectors
- Product installation manual

6 — Servicing the Fan



Fan Removal and Installation

Refer to Hardware Specifications for fan specifications. The fan is installed into its own bracket, which is easily installable or removable from the enclosure to allow for easier maintenance). The instructions on the following page describe how to place the bracket in the slot and secure the enclosure with thumbscrews. The fan is hot-swappable, and you can remove and replace it while the enclosure continues to function.

Caution: The fan is not redundant and should be replaced as soon as possible if it is in non-working condition. Failure to replace a non-working fan may expose drives to extreme heat, which could cause loss of data.

To remove the fan

1. Use a screwdriver to remove the thumbscrew that is located on the fan bracket.

2. Hold on to the thumbscrew and swing the bracket outwards.

3. Disconnect the fan connector from the enclosure.

4. Remove the fan and bracket from the enclosure.

Removal:

1) Using a screwdriver turn the two canister screws counter-clockwise until they are completely unscrewed.
2) Take hold of the canister securely and slowly withdraw it completely.

Insertion:

1) Make sure the canister and connector is clean and free of debris such as tape or dirt which may hinder the installation. Also make sure that the canister cover is screwed in and flush with the rest of the canister.
2) Slide the canister into the slot.
3) Using a screwdriver, turn the two canister screws clockwise to secure the power supply in place.

How to Check for a Bad Power Supply

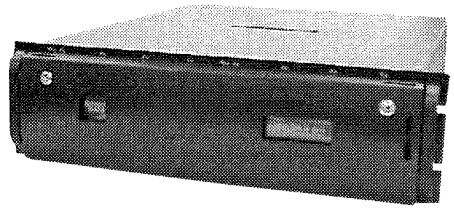
In the event that a power supply is suspected to be in a nonfunctional state, it needs to be checked to be sure. Some of the problems that might occur are:

- Failing LED light on the power supply canister
- Dead power supply
- Intermittent power supply
- Devices do not spin up
- Fan does not start

In the event that symptoms of this nature occur, please check that there is not a loose connection and that the power supply is inserted and firmly seated in its connector.
Follow the power supply insertion instructions above. Ensure that the connector is not damaged and that the contacts appear clean. If you believe a power supply is still in a nonfunctional state after following the steps above, please contact the place of purchase for repair or replacement.

2-Hardware Specifications

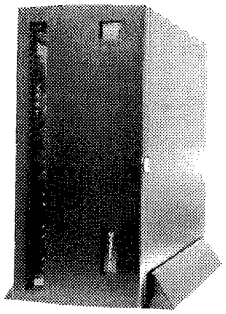
Rackmount Specifications



MODEL	RACKMOUNT
Power Supply	
Quantity	2 (N+1 hot-swappable)
Watts	300 each
Input	90-260 VAC; 47-63 Hz
Output	+5V@15A • Peak@18A +12V@19A • Peak@25A Peak lasts a minimum of 10 seconds
Power Supply Fan	
Quantity	2 (Ball-Bearing located in power supplies)
Size	92mm (3.62")
Air Flow CFM	51 CFM (1.43 m^3/min)
Noise	37dB(A)
Fan	
Quantity	1
Size	80mm (3.15")
Air Flow CFM	42.5 CFM (1.19 m^3/min)
Noise	36.5dB(A)
Unit Weight	37 lbs. (16.8kg)
Shipping Weight	55 lbs. (25.0kg)
Dimensions (H/W/D)	5 1/4" x 19" x 20 3/4" (3U) 132mm x 483mm x 528mm
AC Inlet Type	IEC320/EN60320
Power Cord	NEMA5-15P
Operating Temperature	0° C to +50° C (32° F to 122° F)
Storage Temperature	20° C to 85° C (68° F to 185° F)

Specifications subject to change without notice.

Modular Tower Specifications



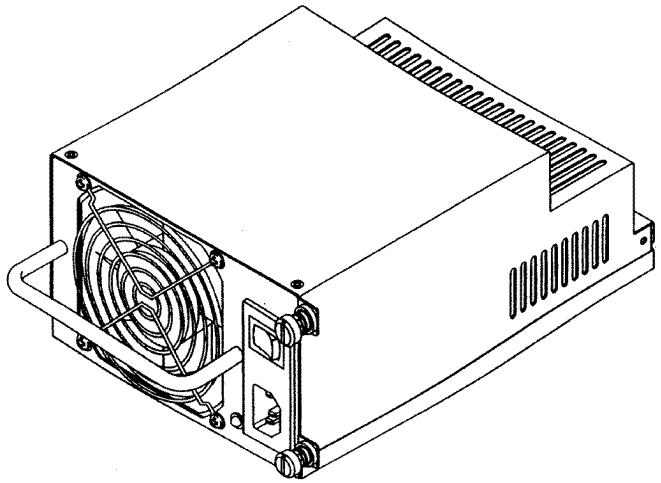
MODEL	MODULAR TOWER
Power Supply	
Quantity	2 (N+1 hot-swappable)
Watts	300 each
Input	90-260 VAC; 47-63 Hz
Output	+5V@15A • Peak@18A +12V@19A • Peak@25A Peak lasts a minimum of 10 seconds
Power Supply Fan	
Quantity	2 (Ball-Bearing located in power supplies)
Size	92mm (3.62")
Air Flow CFM	51 CFM (1.43 m3/min)
Noise	37dB(A)
Fan	
Quantity	1
Size	80mm (3.15")
Air Flow CFM	42.5 CFM (1.19 m3/min)
Noise	36.5dB(A)
Unit Weight	63 lbs. (28.6kg)
Shipping Weight	71 lbs. (32.3kg)
Dimensions (H/W/D)	18 3/8" x 10" x 23 3/4" 464mm x 254mm x 578mm
AC Inlet Type **Power Cord**	IEC320/EN60320 NEMA5-15P
Operating Temperature	0° C to +50° C (32° F to 122° F)
Storage Temperature	20° C to 85° C (68° F to 185° F)

Specifications subject to change without notice.

8-Servicing the Power Supplies

Power Supply Insertion & Removal

Figure 8.1



Removable Power Supply Canister

Refer to Chapter 2 'Hardware Specifications' for power supply specifications. A lit green LED on the front of the power supply will light to indicate that the power supply is working. Each supply canister is housed in a canister which will slide easily in and out for maintenance and installation. Two screws located on the front plate of the canister secure the power supply into place firmly. See Figure 8.1 and follow the directions on the next page to correctly insert or remove a power supply.

Termination

The end of each SCSI bus should be terminated externally. Terminating at the drive level is not recommended since the terminated device may be easily removed. Rorke Data carries its own line of external SCSI wide terminators. Contact a Rorke Data representative for current availability and pricing.

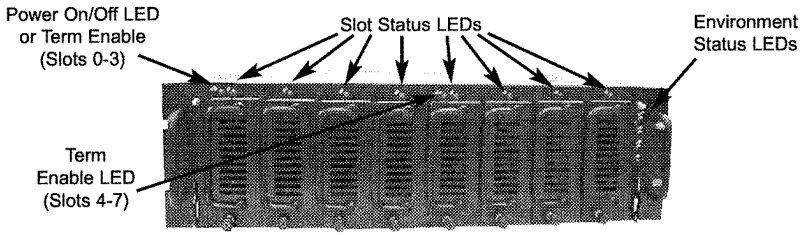
Host Connection

To connect the rackmount or modular tower to the host system an external SCSI cable must be used. Each channel must use a separate external cable connection from the enclosure to the host adapter or RAID controller. It is important that the external cable length and impedance is taken into consideration and is adequate for the devices and speeds being used. Rorke Data carries it's own line of high quality external SCSI cables.

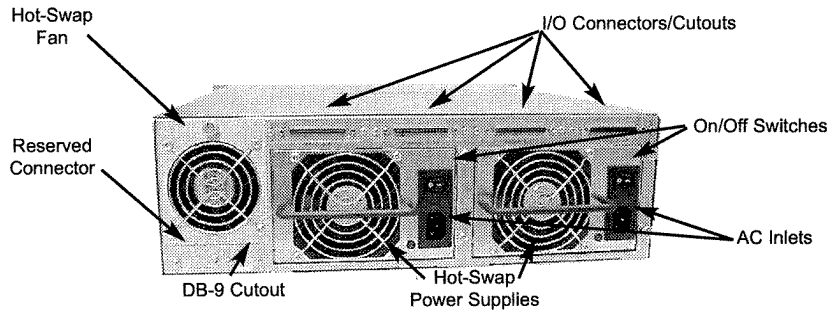
Rackmount LEDs

Front Status LEDs

Each slot has a BSY and FLT LED located directly above it. The environment status LEDs are located on the right side panel of the unit.



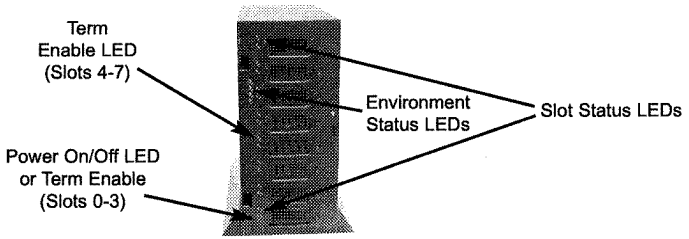
LED NAME	DESCRIPTION
PWR	Indicates Unit Power On/Off. SCSI basic unit use this LED for Term EN on slots 0-3.
BSY	Indicated drive activity for the associated slot.
FLT	Indicates a drive fault for the associated slot in Fibre units.
TEMP/FAIL*	Indicates that the unit has exceeded a safe operating temperature (approx. 60C/140F +/- 5%).
FAN/FAIL*	Indicates a fan failure. The fan is not working or is running slower than necessary to maintain proper unit cooling.
PWR/FAIL*	Indicates a power supply failure or a removed power supply.
PS/FF*	Indicates one of the power supply fans has failed.
TERM EN	Two LEDs that indicates termination enabled/disabled for slots 0-3 and 4-7. LED On = Enabled. Only used in SCSI basic units.



Modular Tower LEDs

Front Status LEDs

Each slot has a BSY and FLT LED located directly to the left. The environment status LEDs are located on the left side of the unit.



LED NAME	DESCRIPTION
PWR	Indicates Unit Power On/Off. SCSI basic unit use this LED for Term EN on slots 0-3.
BSY	Indicated drive activity for the associated slot.
FLT	Indicates a drive fault for the associated slot in Fibre units.
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FAN/FAIL*	Indicates a fan failure. The fan is not working or is running slower than necessary to maintain proper unit cooling.
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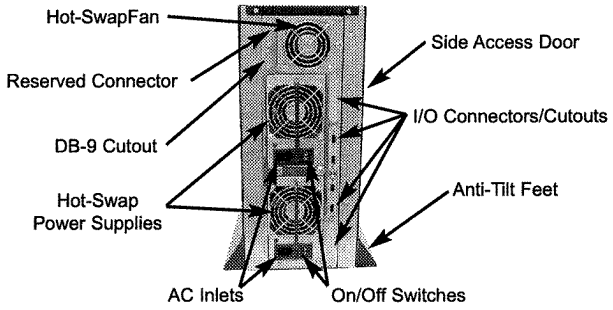
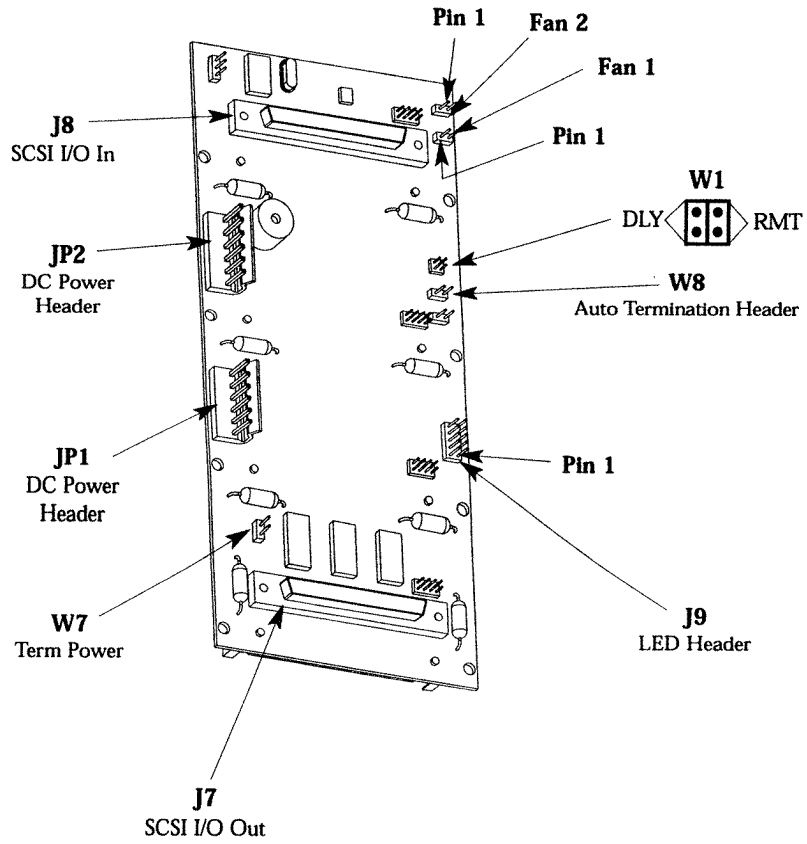




On Board Termination

Basic SCSI units support both LVD (Low-Voltage Differential) SCSI and SE (Single Ended) SCSI devices.

External termination may be used as long as all internal termination on the unit and termination on installed devices is removed.

Built-In Termination Enable/Disable:

W8 no jumper = termination off
W8 pins 1 & 2 jumpered = termination on

NOTE: When built-in termination is enabled. LVD or SE (Single-Ended) termination is automatically determined by the devices installed. If LVD and SE devices are mixed on the same bus, SE termination will be set.

Basic Board Header Legend

Header	Description
DLY(W1)	Delayed start; No jumper = disable; Pins 1 & 2 jumpered = enabled
FAN1	Fan Header; Fan connects red wire to Pin 1.
FAN2	Fan Header for dual fan units only; Fan connects red wire to Pin 1.
J9	LED Header; LED Ribbon cable connects with red stripe to J9 pin 1
RMT(W1)	Remote Start; No jumper = disable; Pins 1 & 2 jumpered = enabled
SYNC1	Spindle Synchronization; No jumper = disable; Pins 1 & 2 jumpered = enabled
W7	Term power header; no jumper = disable; Pins 1 & 2 jumpered = enabled (board will supply termination power to SCSI bus)
W8	Termination enable/disable; jumper on = enable.

3-Fibre Channel Setup

SCA Drive Installation

WARNING: Ground yourself to any grounded metal assembly to alleviate any electro-static discharge which can be potentially damaging to components.

Any 40-pin SCA drive is capable of plugging directly into the backplane and should not require the connection of any additional cabling.

1) Using the special key provided, unlock and remove the canister.

2) Mount the drive into the canister, using device manufacturer-approved screws.

3) Slide the canister back into the unit until fully seated, then screw in the canister lock to finish the installation.

4) Repeat steps 1 to 3 for each canister until all drives have been mounted.

External I/O Connection

Dual DB-9 female connectors are used for the external I/O port connection for both A and B ports.

Loop Direction

- Ports A and B loop in opposite directions
- Port A goes in at slot 7 and comes out slot 0
- Port B goes in at slot 0 and comes out at slot 7

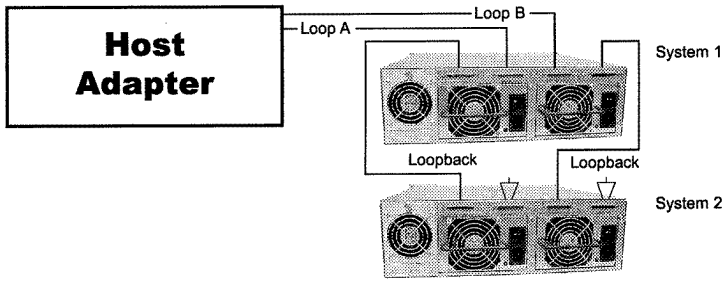
Loop Bypass

Each slot is connected to a loop bypass circuit that will maintain the loop integrity even when a device is not inserted into that slot. It has two modes of operation: NORMAL and BYPASS. In NORMAL mode, the device is connected to the loop. In BYPASS mode, the device is either absent or non-functional and data bypasses to the next available device.

Loop Expansion

The system wiring is connected from the host computer to either port A In or port B In of the first Rackmount unit in the loop. Whichever port In is used, that port 'Out' is connected to the next Rackmount unit port 'In'. Install one of the supplied loop termination plugs on the Out con-nector of the last Rackmount unit in the loop.

Loop Expansion Diagram



MIA Support

MIA Support (Media Interface Adapters) Adapters are supported by the Wildcat fibre units. To use them, just attach the adapter to the DB-9 I/O port on the back of the unit. A tray may be used to give the MIA addi-tional mounting support. The tray part number provided by Rorke Data is XBK-08467 and requires two HDS-01200 screws. Please contact a Rorke Data sales representative for information on pricing and availability of this part.

4-SCSI Setup

SCA Drive Installation

WARNING: Ground yourself to any grounded metal assembly to alleviate any electrostatic discharge which can be potentially damaging to components.

The unit uses 80-pin SCA-2 type connectors which allow for hot swappability if supported by a host adapter. Any SCA drive is capable of plugging directly into the backplane of the unit and should not require the connection of any additional cabling.

1) Using the special key provided, unlock and remove the canister you wish to install the drive in.

2) Mount the drive into the canister, using manufacturer-approved screws only.

3) Slide the canister back into the unit to finish the installation.

4) See changing the SCSI Address below for instructions on changing the SCSI ID.

5) Repeat steps 1 to 4 for each canister until all drives have been mounted.

Changing the SCSI Address

Each canister slot has its own selector switch located on the top of the Rackmount units and behind the removeable side access door on the tower units. Using a pointed object (like a pen) set the desired ID on the switch and cycle power.