FourthRack©
AC PSU
(Managed & Unmanaged)

Installation Guide

Fourthtrack Systems
Unit 11 Lowfield Green
Caversham Park
Reading – RG4 6NZ
England

Telephone: 0118-946-3061
Fax: 0118-946-3091
Web: www.fourthtrack.co.uk
Email: info@fourthtrack.co.uk

Communications answers for the World Market

Please Read SAFETY WARNINGs in section 5

1 Power Supplies

The FourthRack is designed to accommodate up to two PSU modules.

The rack can be powered from a single module or on a load-sharing basis using two modules. The two-module configuration provides resilience to a single PSU failure and, if supplied from separate mains circuits, provides protection against the failure of a supply.

There are four variants of PSU designed for the FourthRack:

- AC Unmanaged
- AC Managed
- DC Unmanaged
- DC Managed

This Installation Guide details the two AC Power Modules that can be used with the rack.

2 Specification

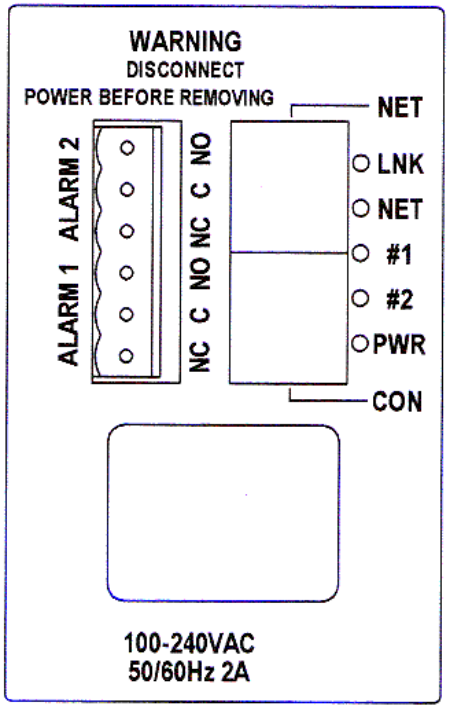
2.1 Common:

Input voltage range	100/240V AC 50/60Hz
Input voltage selection	Auto ranging
Input Connector	IEC standard
Output:	5V at 25A max Load sharing
Power factor	Correction to EN61000-3-2
Cooling	Convection
MTBF	In excess of 1M hours
Indicator:	PWR (Power) Green

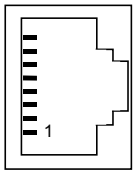
2.2 Managed version only

Connectors	Alarm 1	3 Way screw terminal
	Alarm 2	3 Way screw terminal`
	NET (Network)	RJ45
	CON (Console)	RJ45
Indicators	LNK (Link)	Amber
	NET (Network)	Amber
	#1	Amber
	#2	Amber

2.2.1 Panel layout (managed version)



2.2.2 RJ45 Pinout



Net (10BASET)

1	RXa	5	
2	RXb	6	TXb
3	TXa	7	
4		8	

CON (RS232)

1		5	TX
2		6	RX
3		7	
4	Common	8	

3 Installation

3.1 Important information

STATIC DISCHARGE PRECAUTIONS

When handling Power Supply modules it is important to take precautions to avoid damage due to static discharge. The use of wrist straps is recommended.

If wrist straps are not available, the modules should only be handled by their front panels. Out of service PSU modules should either be stored in the rack or in their original anti-static packaging.

SAFETY WARNINGS

Do not connect to the mains supply (IEC) until the PSU module is installed correctly in the chassis.

Always remove the mains supply before removing a PSU module from the chassis. The module must never be connected to the mains outside of the rack as Dangerous Voltages are exposed.

There are no User Serviceable Parts. Replacement of the fuse should only be undertaken by suitably qualified technical staff.

3.2 Installing Power supplies in the FourthRack

The power supply packaging contains the power module and a user guide. The AC supplies include a UK IEC mains lead and serial management cable if management is supported by the supply module.

The power supply can be installed in slot one (left hand) or slot 16 of the FourthRack Chassis.

Remove the power supply from the packaging and orientate so that the silk screen can be read. Insert the power supply into the slot, locating the fibreglass of the circuit board into the card guides. Ensure that the power supply is squarely located and push the card home into the slot. Fix firmly in position using the two captive screws.

When the module is correctly installed the mains supply can be connected. Connect the IEC to the chassis, and then connect the corresponding plug to the power socket, and turn on the power.

The green "PWR" LED should illuminate to indicate that the PSU is providing power to the rack.

4 Dual supply mode

The FourthRack can be configured with two Power Supply modules. This provides resilience in the case of a single module failure or supply failure. The power supply modules are designed for "hot swapping". It is possible to power down a single supply and remove it from the rack without compromising the operation of the rack. A replacement module should be inserted before it is connected to the mains supply.

5 Management Cable Spec

The managed PSU is supplied with a serial console port cable. The details are given below:

Cable part number: CAB-MAN-1

Description: FourthRack management card serial cable

Cable type: Category 5 cable

Jacket type: PVC

Length: 2 metres

Connections

FourthRack end RJ45	Terminal end DB9
1	
2	
3	
4	5
5	2
6	3
7	
8	

N.B. RJ45 end is fully loaded when terminating for greater strain relief.

6 Application Note:

6.1 Connecting the FourthRack power supply

The FourthRack power supply modules uses switch mode power supplies. This is true for both the managed and un-managed power supply modules.

Switch mode power supplies have the potential to take a high surge current (in-rush current) when first powered on.

It is advisable to follow the following procedure when connecting the FourthRack power supply modules to the mains power outlet.

Connect the IEC connector on the mains lead to the FourthRack power supply module. Insert the plug at the other end of the mains lead into the switched mains outlet, with the switch off. Turn the power on using the switch on the mains outlet.

Note that if the IEC connector is inserted into the FourthRack power supply module with the power already switched on, there is a strong possibility that the power supply fuse will be blown. This is due to the possibility of arching between the IEC connector and the IEC socket. The arching is due to intermittent contact between the plug and the socket, because of the tendency of the power supplies to take a high surge current (in-rush current) when first powered on.

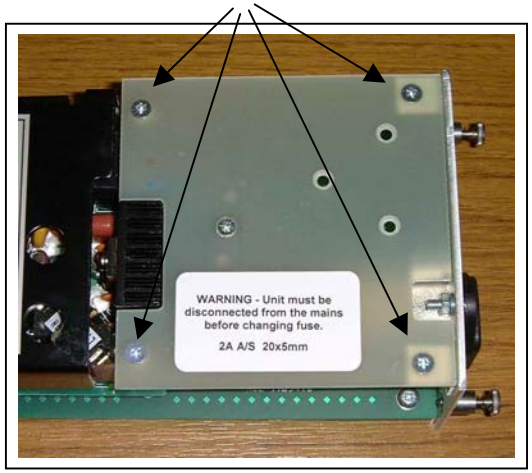
Power supplies are shipped with two spare fuses.

7 Replacing the fuse

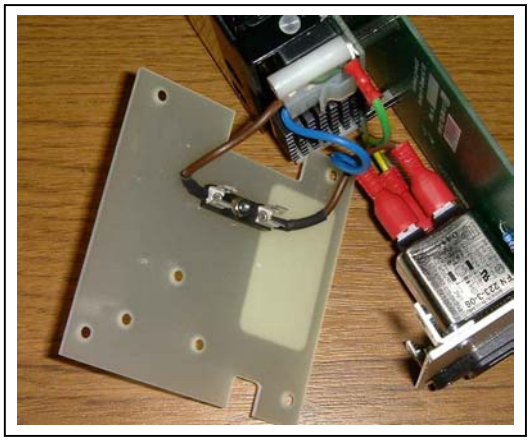
The unit must be disconnected from the mains supply before attempting to change the fuse.

The fuse is located on the underside of the panel shown below.

To replace the fuse remove the panel by unscrewing the four corner fixing screws shown below



Remove the plastic fuse cover, replace the fuse in the cover with a fuse of the correct rating and type (2Amp Anti-Surge 20x5mm). Reassemble the fuse cover and the panel.



NB If the fuse immediately blows again the unit should be treated as faulty. Under no circumstances should the fuse be replaced by one of a higher rating.