

# Contents

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# 1 Introduction

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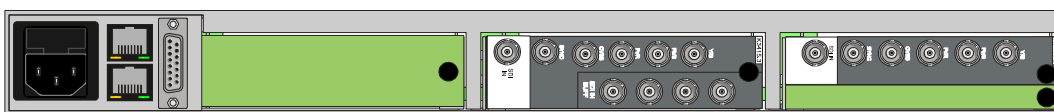
The Pro-Bel 1051 rack frame is a 19 inch wide 1RU high unit, which can accommodate up to three ICON modules. Modules may have either 20mm or 30mm rear connectors.

The main features are:

- accommodates up to 3 modules with 20mm rear connectors or 30mm rear connectors
- hot-swappable power supply
- alarm outputs for power supply and fan failure
- compatible with Pro-Bel COSMOS configuration and status monitoring system
- removable door
- robust construction
- fan assisted cross flow cooling



The 1051 rack frame



The 1051 rack frame rear view



# 1 Installation

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## 1.1 Installing the rack frame

Since the 1051 1RU rack frame is designed for transverse air flow, it is not necessary to leave vertical space between multiple frames. However, side vents must not be obstructed.



The 1051 rack frame air flow

Access to the integral rack mounting brackets is obtained by removing the door.

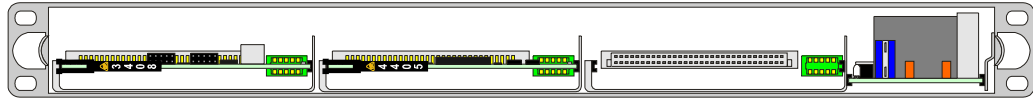
## 1.2 Door fitting and removal

The ICON door is held closed by sprung ball latches at either side. The door may be removed by pulling outwards using the orange coloured finger pull recesses.

To fit the door press firmly until both sprung ball latches click home.



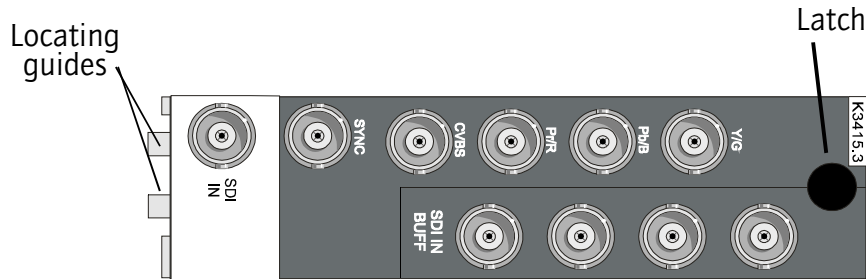
**Note:** The door should always be fitted to maintain optimal cross flow cooling.



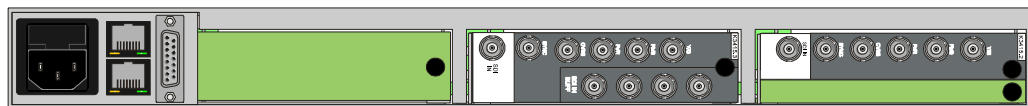
Door removed to show fitted modules mounting brackets

## 1.3 Module Installation and removal

Rear connector panels are held in place with two locating guides and a plastic latch.



The K3415-3 30mm rear panel



The 1051 frame rear view showing a mixture of 30mm and 20mm rear panel connectors and blank panels

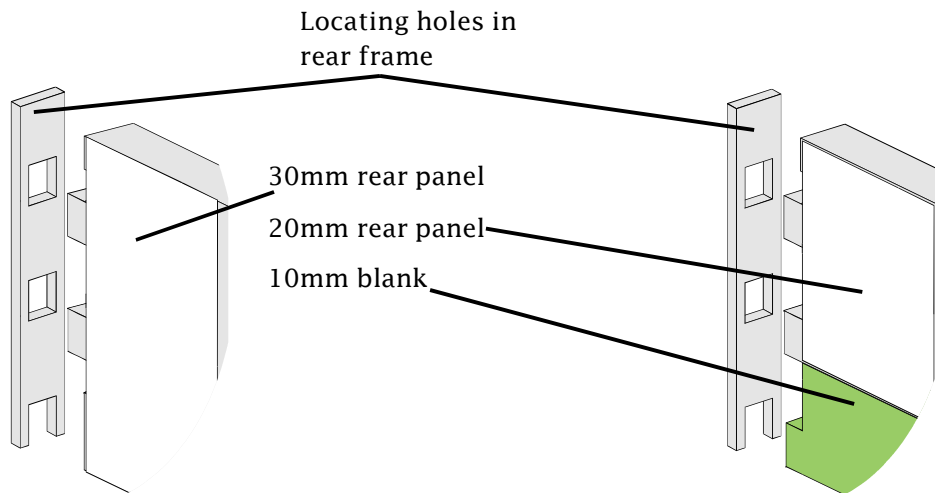
**Note:** Always ensure that blank panels are used if any modules slots are vacant to retain optimal cross flow cooling.

### Fitting a new module

To fit a new module in the 1051 frame proceed as follows:

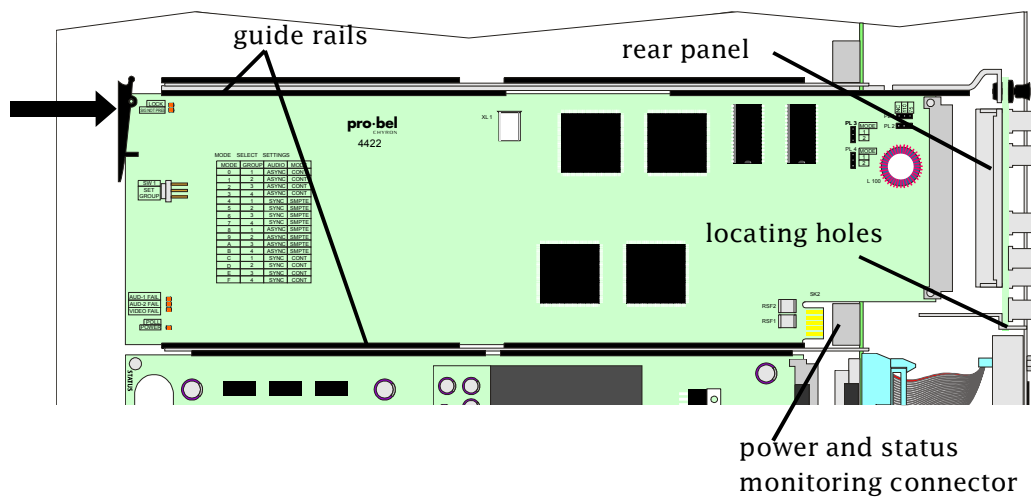
**Step 1. Fit the rear connector panel:**

- ensure plastic latch is fully retracted
- slot the rear connector 'locating guides' into the appropriate locating holes then push the latch fully home



**Step 2. Fit the module:**

- slide the module along the guide rail of the required slot, gently pushing it fully home until it marries up with both the rear connector and power and status monitoring bus connectors.



Inserting a module

### Step 3. Fit any required blank panels

Cover unused rear panel space with the blank rear panels supplied.

## Module removal

To remove the card proceed as follows:

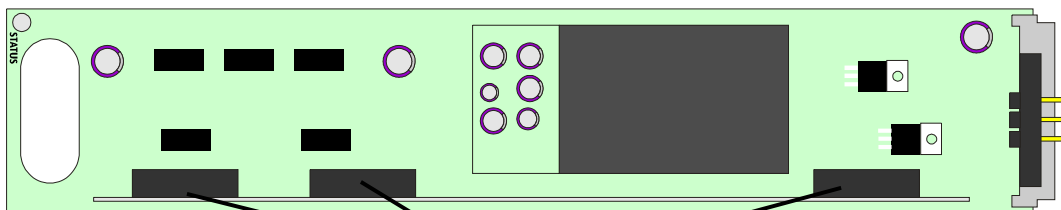
- lift up the card ejector and gently pull the card out

**WARNING:** Do not remove the rear connector with the module in place, as rear connector pins may be bent or damaged.

**WARNING:** Please observe normal static handling precautions when handling electronic equipment or sub assemblies.

## 1.4 Inserting and removing power supplies

The 1051 1U ICON frame accepts a single internal 1951 power supply which autosenses input voltage between 90 and 253 volts and 50-60 Hz.

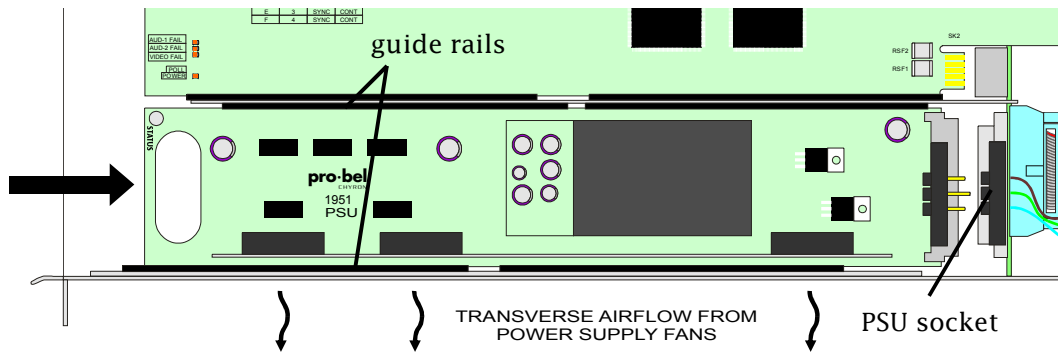


Integral fans on the 1051 PSU

The power supply's integral fans provide cooling for itself and all modules. The front door **must be kept closed** for this cooling to function.

Power supply insertion for the 1051 1RU frame involves the following steps:-

- slide the 1951 power supply into its slots at the right of the frame using the PSU guides
- ensure front door is closed



Inserting the 1051 PSU

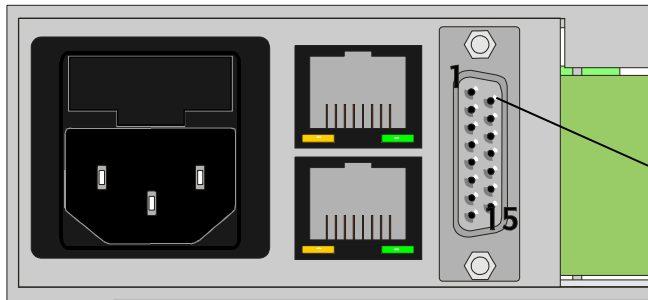
Power supply removal is as follows:

- slide out the power supply from the front



## 1.5 Power supply monitoring

The CNTL/ power input socket at the rear of the 1RU frame allows an external PSU to be connected and for the status of the 1951 PSU to be monitored remotely. Relay contacts indicate errors in DC output voltage, fan operation or over temperature for the internal power supply.



Power supply status and external PSU 15 pin 'D' female connector

STATUS	
Pin	Function
1	Chassis
2	ModDataIn (COSMOS)
3	Clock
4	Relay open for fault
5	-15V in
6	+15V in
7	+5V6 in
8	Chassis
9	ModEn1 (COSMOS)
10	ModDataOut (COSMOS)
11	Relay closed for fault
12	Relay common
13	N/C
14	+5V6 in
15	Chassis

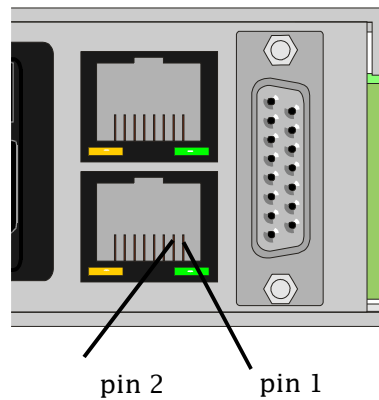
## 1.6 The COSMOS controller

The COSMOS controller will be an optional board added to the internal PSU.

The COSMOS controller will enable the two loop-through RJ45 connectors at the rear of the frame to be connected to a CAN Bus network using CAT5 UTP cable.

The connections are as follows:

CAN Bus RJ45 connections	
Pin	Function
1	CAN+
2	CAN-
3-4	CAN GND
5-8	Factory wired pin to pin between connectors



If shielded cable is preferred, the RJ45s sockets are of a screened type and a ground contact can be made to the mating connector screen.

For more details on COSMOS please refer to the COSMOS manual.



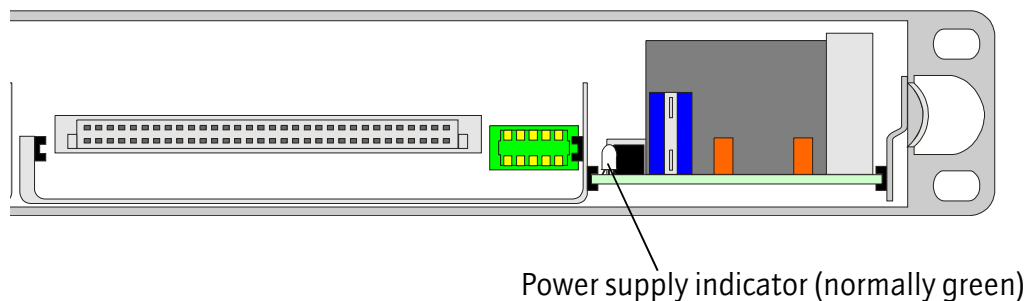
## 2 Operation

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### 2.1 Checking the power supply

**Power supply indicator is off:**

- check that the mains is connected
- check that the fuse is intact



**Power supply indicator changes from green to red**

If the 1951 dual colour LED changes to red then a fault condition exists and a replacement unit should be obtained. A red LED indicates that one of the following conditions is present:

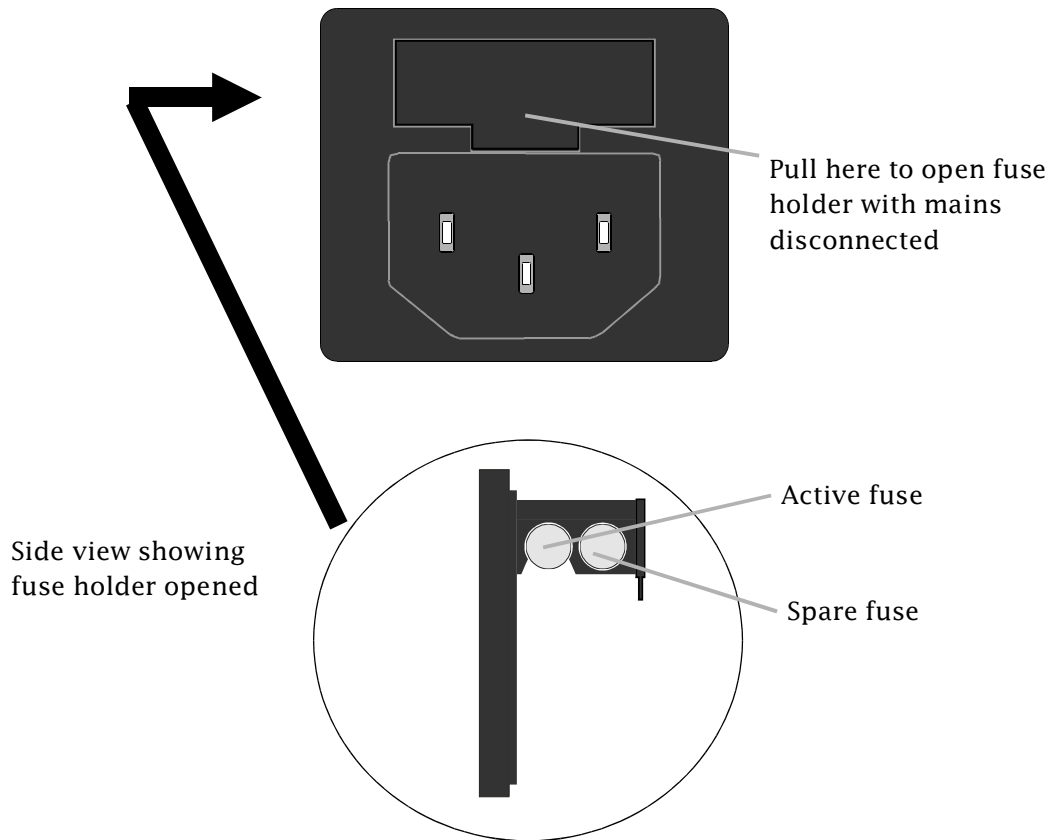
- voltage rails under or over voltage
- fan defective
- unit is over heating

In the event of a failure of the internal power supply the external unit (if fitted) will continue to supply the modules in the rack. In addition, the working unit will power the fan of the defective unit to prevent air flow obstruction. A replacement unit should still be obtained as soon as possible.

Power supply operation may also be monitored via the Pro-Bel status monitoring system, please refer to the COSMOS status monitoring manual for details.

## Changing a fuse

To gain access to the active and spare fuses open the fuse cover at the rear of the frame.



Active and spare fuse located in integral fuse holder

**Warning:** For continued protection against fire, always replace fuse with a 250V 1A (T) 20mm fuse as specified.

## 3 Specification

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### General

Frame size:	1RU x 19 inch x 480mm (depth behind rack)
Frame weight:	9kg (typical, fully equipped)
Capacity:	3 modules with 30mm or 20mm rear connectors

### PSU type

1951 (main)	Single AC input autosensing 90 to 253volts, 50-60 Hz, 60 watt Fuse 1A, 250V, anti-surge 20mm (fuse holder is part of IEC mains input connector mounted at rear of frame) PSU OK indicator
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## 4 **Ordering information**

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**Part number**

ICO-FR1U-1000

**Description**1U ICON rack frame with power supply module,  
no COSMOS controller



