Power Supply redesign

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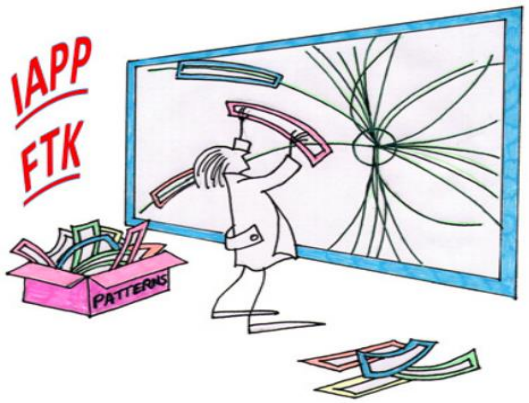
IAPP Project number: 324318

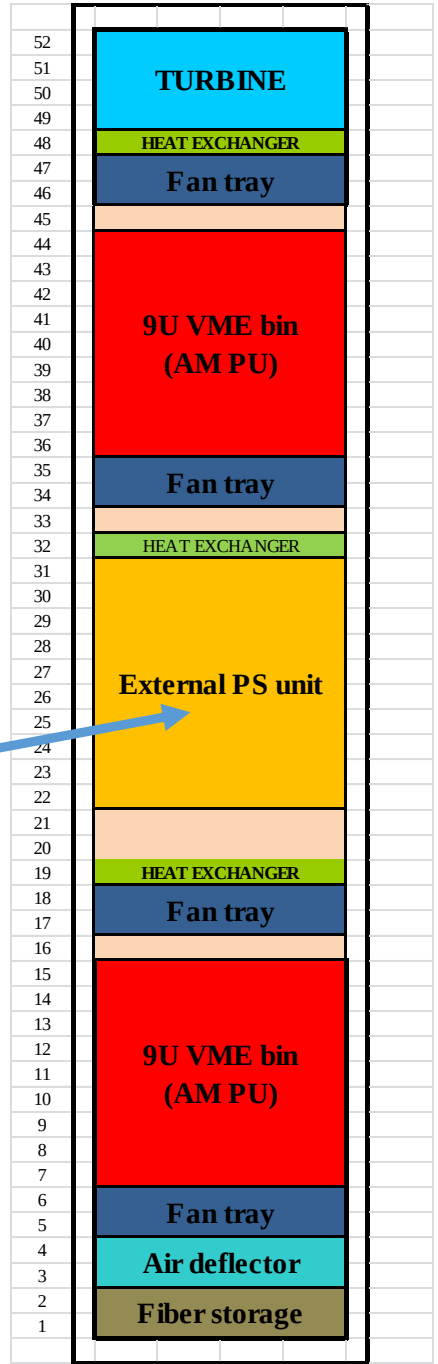


Paris, 11/3/2015

FTK rack and CAEN PS

- 1 power supply for 2 VME crates (1 rack)
- 16 Kwatt of total power

CAEN Power Supply
(9U high)



FTK rack

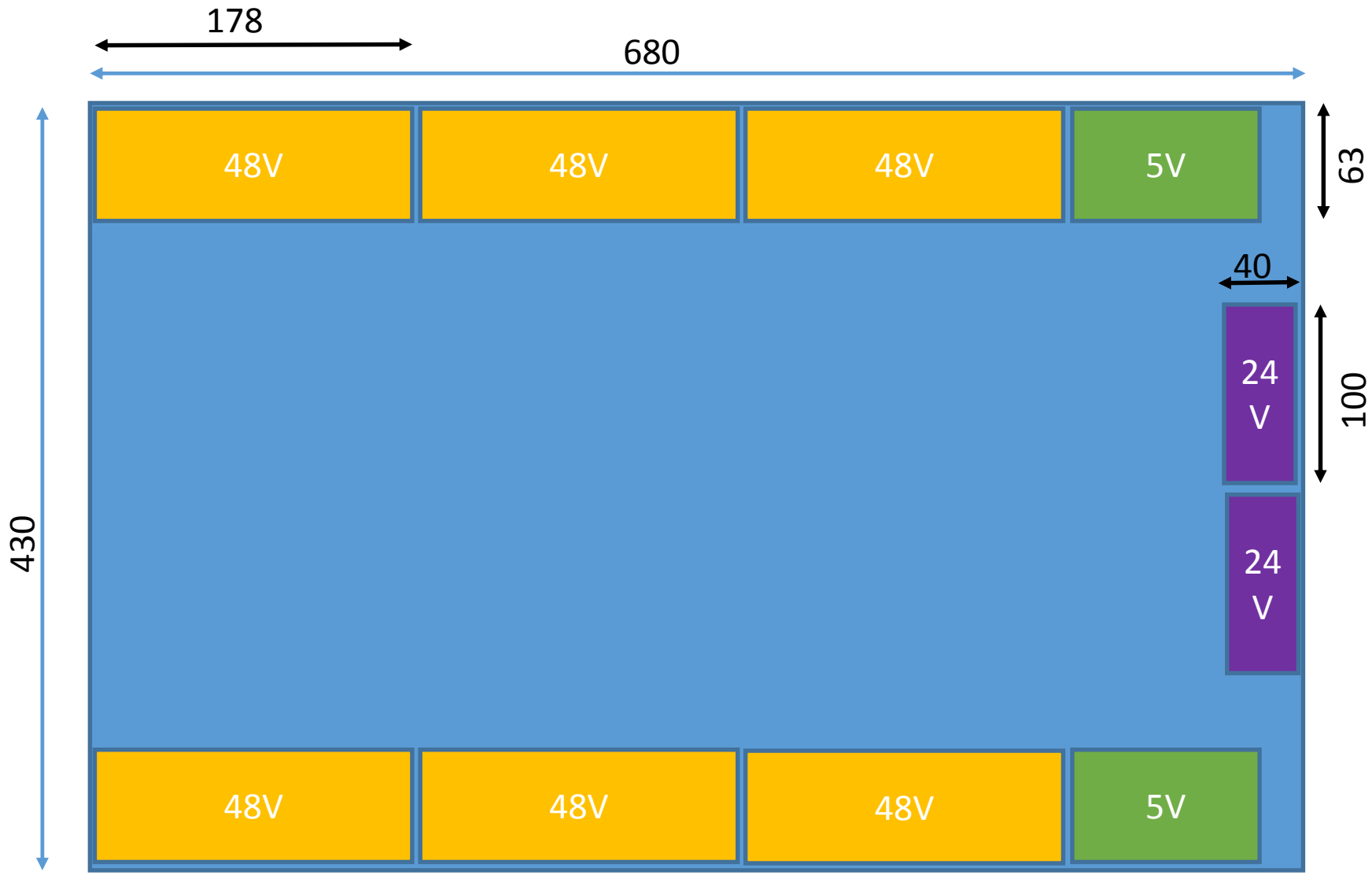
Specification

- 2Ch 48V/150A
- 2Ch 5V/120A,
- 2Ch 24V(Max 30V)/30A (Max 35A),
- Input: 3-phase, 1 connector for each channel group
- Output: bolts placed 5 cm from each other
- Interface: Ethernet + display
- Local / Remote Control:
  - V/I Monitor for each Voltage
  - ON/OFF Control for each section.
- Dimensions: 9U 680mm

Layout (view from the top)

dimensions in mm

High: 9U



MEAN WELL

2400W Single Output Power Supply

RSP-2400 series

■ Features :

- AC input 180 ~ 264VAC
- AC input active surge current limiting
- High efficiency up to 91.5%
- Built-in active PFC function,PF>0.95
- Protections: Short circuit / Overload / Over voltage / Over temperature / Fan alarm
- Forced air cooling by built-in DC with fan speed control function
- Output voltage can be trimmed between 20~110% of the rated output voltage
- High power density 12.5W/inch^3
- Current sharing up to 3 units
- Alarm signal output (relay contact and TTL signal)
- Built-in 12V/0.1A auxiliary output for remote control
- Built-in remote ON-OFF control
- Built-in remote sense function
- 5 years warranty

Parallel PFC c UL us CB CE

SPECIFICATION

Remote monitoring/control: electronics

Landi C. (CAEN)
Orazzini A. (CAEN)
Piendibene M. (UNIPI)

Display board
ALREADY EXISTING (CAEN)

- Ethernet/Canbus interface for remote control
- Microcontroller

Monitoring board
UNDER DESIGN (Landi, Orazzini, Piendibene)

- V/I monitoring for 48V, 24V and 5V
- Signal conditioning for ADC compatibility
- ON/OFF control for each channel of the power supply

ADC board (plug in board)
ALREADY EXISTING (CAEN)

- Microcontroller
- ADC

Monitoring board: current monitoring

LEM

Current Transducer HAIS 50..400-P and HAIS 50..100-TP

I_{PN} = 50 .. 400 A

For the electronic measurement of currents : DC, AC, pulsed, mixed, with a galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).

LEM TRANSDUCERS 5 YEARS WARRANTY

CE

RoHS COMPLIANT 2002/95/EC

All Data are given with a R_L = 10 kΩ

Status:

- Power supply mechanics: ORDERED at CERN
  - The mechanics will be finalized by CAEN
- Power supply modules: ORDERED
- Monitoring board: UNDER DESIGN
- Display board: ALREADY EXISTING
- ADC board: ALREADY EXISTING
- Firmware for microcontrollers: TO BE WRITTEN (but something is already present)
- TESTS: TO BE DONE

CAEN
Tools for Discovery

IN SUPREMÆ DIGNITATIS
1343

Thanks