

Integrated Power Supplies (IPS)

Safe • Reliable • Integrated



Introduction

Signalling and Telecommunication (S&T) operations in railway stations require reliable and uninterrupted power to be supplied to various equipment. The voltages and currents for each equipment are different from the others. This demands a centralized power supply solution that can process grid power, combined with battery back-up, to deliver electric energy at various voltages and currents.

HBL introduced Integrated Power Supply (IPS) system in 1999 to meet these requirements at an optimum capital & maintenance costs. With backup from a single battery, IPS ensures reliable and uninterrupted power of all voltages, AC or DC, for all the S&T Telecom loads in railway stations, obviating the need for independent UPS for different loads in each station.

IPS system consists of various modules such as Switch Mode Rectifiers, Inverters, DC-DC converters, Transformers and Automatic Voltage Regulators (AVR). The modular system design, with $n+1$ redundancy and parallel operation, makes it scalable to accommodate future load demands cost effectively. Remote monitoring and operation of the IPS significantly reduces maintenance requirements.

Key System Features

- ⦿ Wide Input AC supply range (150-275)VAC
- ⦿ High Input power factor(>99)
- ⦿ High power switch mode rectifiers for battery charging
- ⦿ Low input current distortion (<10%)
- ⦿ Better reliability for modules with N+1 redundancy
- ⦿ Remote display and alerts with alarm for module failures, and battery condition
- ⦿ Compact space saving modular design
- ⦿ Separate panels for SMPS, AC and DC circuits
- ⦿ Surge protection for input Class B and output Class B and C circuits



Key System Components

SMPS-FRBC Panel(Float Rectifier Cum Boost Charger)



FRBC Panel



SMR Module

AC - Distribution Panel

Transformer Module



ACDB Panel



Inverter Module



CVT/AVR Module



DC - Distribution Panel

DC-DC Converter

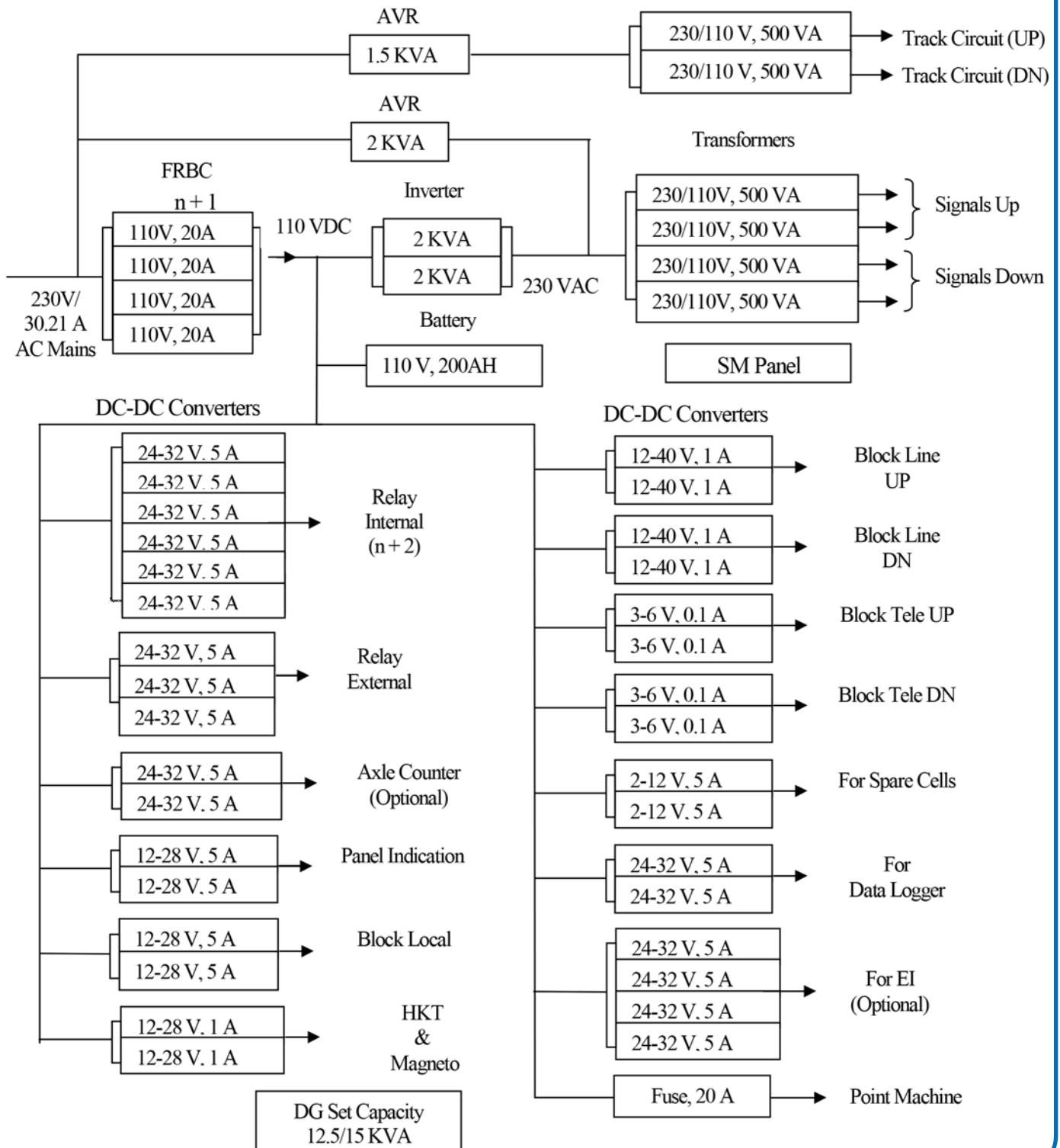


DCDB Panel



Typical Block Diagram

IPS for upto 6 lines without AFTC RE Area (SDO/IPS/PI-6L/RE/004)



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