

**NEWER  
PRODUCTS  
ARE AVAILABLE**



**XP Power**



**Railway Power Solutions**

# Product Highlights

For full specifications visit:  
[www.xppower.com](http://www.xppower.com)

20 to 40 Watts

## RDC20-40



- Wide Input Voltage
- 36 to 140 VDC & 55 to 176 VDC Input
- Modified Standard Input & Output Available
- Single, Dual & Triple Output
- High Efficiency
- Up to 85 °C Operating Temperature
- Remote On/Off
- 3 Year Warranty

100 to 150 Watts

## RDQ100-150



- Wide Input Voltage
- 66 to 160 VDC
- Modified Standard Input & Output Available
- High Efficiency
- -40 °C to +100 °C Operating Temperature
- EN50121-3-2 Compliant for Rolling Stock
- EMI to EN55011
- 3 Year Warranty

400 to 600 Watts

## CCH400-600



- Conduction-cooled
- High Efficiency
- -40 °C to +70 °C Operation
- 5 V/0.5 A Standby Output
- Power Fail, Inhibit & Current Share
- Low EMI
- Ruggedized
- 3 Year Warranty

5 to 960 Watts

## DIN Rail



- Single & Three Phase
- Up to 93% Efficiency
- Wide Adjustment Ranges
- DC OK (24 V Models)
- DC Standby Versions Available
- Parallel Capability
- Full Power to 60 °C
- 3 Year Warranty

25 to 12 kWatts

## Eurocard



- DIN 41494 Compliant
- 1 - 4 Outputs
- Convection-cooled to 70 °C
- 5 - 400 VDC Output
- Parallel Redundant Operation
- Eurocassette or Wall Mount
- Conformal Coating
- 3 Year Warranty

## Application:

**Customer Requirement:** A power supply for trackside locations that operates from either an AC or DC input providing regulated DC supplies to power signalling relays and an electronic treadle used in critical train positioning, such as Automated Level Crossings. Safety Integrity Level 3.

**Solution:** XP Power created a non-standard Eurocard with multiple outputs of 7.5, 12 & 24 VDC with a total output power of 180 W. The input to the supply could come from both an 85 - 264 VAC input or a wide range 36 - 160 VDC input. The product also has AC OK, DC OK and redundant capabilities.





# The XPerts in Power for Railway Power Solutions

Power solutions for railway and transportation systems have to meet a wide range of challenging technical specifications and logistic requirements in order to be installed and operated reliably on rolling stock, trackside infrastructure and other mobile platforms. Our engineering and project management teams are experts in this area.

Below are some of the requirements that need to be considered when selecting a power supply supplier.

- Compliance to harmonized standards: EN50121, EN50124, EN50125, EN50155 & EN50163 and national standards : RIA, NF01-510, VDE, ST and others.
- Reliability by conservative component de-rating
- Full Design Verification Testing (DVT)
- Long product life cycle and End Of Life (EOL) management
- Dedicated project management
- Wide input voltages for common DC battery input voltages used worldwide
- EMC/EMI control and immunity to spikes, surges
- Rugged build standard
- Wide operating temperature range (typical -40 °C to 70 °C)
- Convection or conduction-cooling
- Parallel and redundant operation
- Thermal, overvoltage, overcurrent protection
- RoHS compliance
- ISO9001 quality management system

Thousands of XP Power products have been installed on rolling stock and trackside equipment globally. Applications include signalling, crossing control, in-cabin radio and displays. Our products are designed to meet harsh requirements and undergo extensive environmental testing, safety approvals, design verification testing (DVT) and HALT testing. Our engineering teams are located worldwide to be close to our customers, they use only approved component suppliers and components that meet our conservative design guidelines, ensuring reliability is designed in from the ground up. Included in this brochure are a selection of standard products and examples of engineered solutions that are currently in production for railway customers.

**For more information on how XP Power can help with your next project, please contact your local sales and engineering teams or visit us at [www.xppower.com](http://www.xppower.com)**

## Our Mission

**To inspire our people to be the experts in power delivering genuine value to our customers**

XP Power has been providing power solutions to the railway industry for more than 20 years

- London Stock Exchange listed with worldwide sales of \$160m
- Design, engineering and sales in 14 countries
- Expertise in railway industry requirements
- Standard, modified and customized AC-DC and DC-DC power solutions





XP Engineering Services provides solutions where applications cannot be fulfilled from our standard product range or where integrated products are required. We offer the world's broadest standard product range, which provides us with a vast selection of power platforms from which to deliver complex modified standards.

We design and manufacture cost effective application specific solutions that meet your electrical, mechanical, safety, EMC and thermal management requirements, while ensuring a fast time to market.

- Low development cost
- Low risk, proven technology
- World class design
- Short development times
- Worldwide local engineering support
- Low cost manufacturing in Asia
- ISO 9001 certified quality management system
- Railway application experts

## Mechanical Design

- 3D-model, photo-rendering, animation
- Thermal, stress and mass simulation
- Environmentally sealed units

## Electrical Design

- Filter design for specific noise and ripple standards
- I<sup>2</sup>C interface requirements for power supply health and control
- Blind-mate, hot-swap experts
- Embedded micro-processor based design
- Schematic capture / simulation
- Compliance with railway specifications (RIA, EN, NF, VDE etc.)

## Quality and Test

- 100% parametric DVT testing
- In-system troubleshooting
- System specific testing can also be provided
  - Turnkey EMC certification
  - HALT / HASS integrity testing
  - Burn-in



# RIA 12, EN50155 & EN50124-1 UPS

Compliant

Replaceable Battery On Sled

0-70 °C Operation

Digital Signal Set

- UPS Shutdown
- Emergency Override
- Battery Status
- Charger Control

DC UPS 2 hr Autonomy

24 & 110 V DC Rail Inputs

Environmentally Tested

- Storage
- Shock
- Altitude
- Vibration
- Humidity
- Salt Mist

## Printed Circuit Board Design

- Timely electrical assemblies improving customer time-to-market
- Safety specific creepage and clearance
- Design for manufacturability
- PCB modeling & layout

## Software Programming

- In-house software / firmware development
- Serial bus interfaces - I<sup>2</sup>C & RS232 / 422
- Software / firmware functionality
  - Smart battery interface (SMBus)
  - Battery charging
  - Power supply sequencing
  - Power supply alarm and control

## Safety & Compliance

- Compliance engineering
- Expert knowledge of UL, TUV, CSA, CE & CB schemes
- Compliance to harmonized standards:
  - EN50155, EN50125 & EN50163
- Compliance to legacy/national standards:
  - RIA, NF, VDE, ST and others
- CE mark and international safety approvals
- Risk analysis

## Rugged & Reliable Rail Transport Solutions

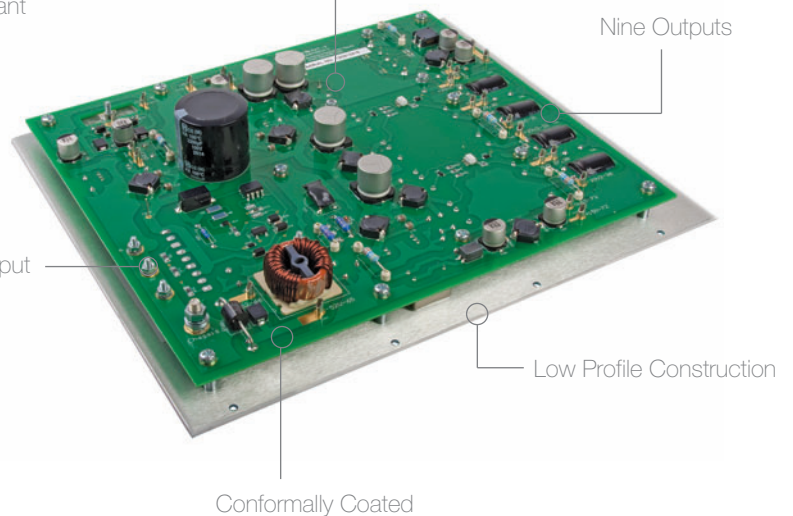
EN50155 / RIA 12, 13, 18, 20 & 22 Compliant

Nine Outputs

52 V Rail Input

Low Profile Construction

Conformally Coated





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