TRYSTAR®

PCS-RS40-PS
38kW Bi-Directional DC Power Supply
Rack Scale™ Series



15765 Acorn Trail / Faribault, MN 55021 / 507.333.3990

TRYSTAR.com

38kW BI-DIRECTIONAL DC POWER SUPPLY

Rack Scale™ Series



The PCS-RS40-PS is a bidirectional, digitally controlled DC power supply, able to both source and sink current, regardless of the operating mode. It provides three control modes, voltage, current, or power, allowing use in a wide range of non-isolated applications up to 38kW, 820VDC and 75A. Higher power, higher current requirements are easily accommodated by connecting multiple PCS-RS40-PS units in parallel, while Modbus broadcast messaging facilitates simultaneous unit control.

In voltage control mode, the supply regulates the DC output voltage, sourcing or sinking current as required to maintain voltage regulation. The transition between sourcing and sinking is seamless and requires no user configuration or control. Current control mode provides controlled current source/sink operation, with the ability to set and dynamically adjust the current level as required. The power control mode behaves similarly, dynamically adjusting the current in response to load impedance to maintain a constant power level.

All configuration and operating parameters are easily modified using the RS485 Modbus serial port and the complementary Trystar Power Studio™ Tool, which facilitates configuration management, dashboard control of one or multiple supplies and field code updates. Three types of data logging functions are provided for diagnostics. Event Data Logging captures operating parameters on a fault or user configured trigger event. Fault History Logs provide time stamp and event counters for each fault source. Operating History Logs provide cumulative time spent operating under a variety of conditions, as well as min/max values of critical parameters.

Flexible

- Voltage, current and power control modes
- Wide AC voltage 50/60Hz operating range
- >0.99% power factor

Scalable

- Parallelable for high power
- Compact 2.5U 19” rack mount
- Front-side terminations for easy cable routing

Integrated

- Modbus RS-485 config and control interface
- Software configurable protection features
- Variable speed forced air cooling

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PCS-RS40-PS Specifications

- **0-820VDC, 75A MAX**
- **UP TO 38KW @ 480VAC**
- **UP TO 18KW @ 208VAC**
- **VOLTAGE, CURRENT & POWER CONTROL MODES**

DC CONNECTION

Operating Voltage Range	0 - 820 V
Max DC Current	+/- 75 A
Max DC Power	38 kW
Control Modes	Voltage | Current | Power

AC CONNECTION

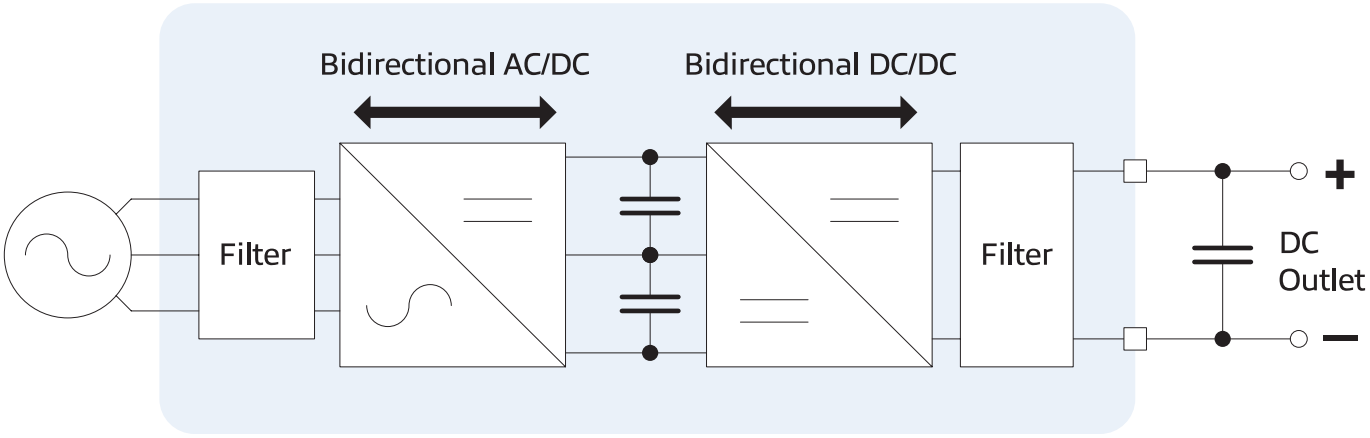
AC Line Voltage	208 - 480 VRMS
AC Line Frequency	50 / 60 Hz
Rated AC current	50 ARMS
Power Factor	>0.99%
Current Harmonics	IEEE 519 Compliant, <5% TDD
Current Harmonics, rated current	<3% THD
Peak Efficiency	98%

ENVIRONMENTAL

Operating Temp	-5°C to 45°C continuous | 60°C max
Max Elevation	1,000m
	3,000m Derated
Enclosure	2.5U, 19” Rack Mount
Weight	43kg / 97 Lbs
Cooling	Forced air by internal variable speed fans
Ingress Protection	IP20
Certifications and Standards Compliance	UL1741

USER INTERFACE

Isolated Communication Link	Modbus RS-485
Isolated Digital Inputs	Emergency Shutoff | Bias Enable
Isolated Digital Outputs	User Configurable 2



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