iNFiNiPOWER
Powering Trust, Driving Innovation

RPS-7000

Regenerative AC/DC Power Systems

High Power. High Performance.
Built for Mission-Critical Testing.

Regenerative | Easy Use | Compliance | High Range | Constant Power | High Current

CE TÜVRheinland®

KEY FEATURES

- Output Power: 9 kVA – 22.5 kVA per unit
- Scalable Power Capacity up to 225 kVA
- Output Voltage: 0 – 350 V; 0 – 400 V (Optional)
- Frequency: DC, 30 – 150 Hz; 30 – 1000 Hz (Optional)
- Maximum current increased by 35%
- Key component cooling efficiency + 20%
- Parallel connection for high power capacity
- Output Modes: Single-phase, three-phase, or split-phase (up to 200% of rated voltage)
- Three Operating Modes: Constant Voltage, Constant Current, and Constant Power
- LIST, STEP, PULSE, and TRANSIENT modes
- Arbitrary Waveform Editing & Power Line Disturbance (PLD) Simulation
- Harmonic disturbance/waveform superposition
- Harmonic Analysis: Voltage and current measurements up to the 50th harmonic
- Compliant with Grid Connection Standards such as LVRT, Phase Shift, Frequency Variation, Harmonic Injection
- Standards Compliance: IEC 61000 -3-2/-3-3/-3-11/-3-12/-4-11/-4-13/-4-14/-4-28/-4-34 testing
- Interfaces: USB, LAN, GPIB, CAN, and Std I/O

Applications:

- AI server, Data center, and HDVC applications
- EV chargers, BOBC, V2G, V2H, V2X, EV charging cables and components
- Solar PV inverters, grid-connected inverters, and wind power systems
- Industrial and residential Energy Storage Systems (ESS), Power Conversion Systems (PCS)
- Uninterruptible Power Supplies (UPS) and Power Distribution Units (PDUs)
- Regulatory Testing: IEEE 1547, UL 1741, IEC 62116, etc.
- Micro-grid Testing, PHIL (Power Hardware-in-the-Loop), and Anti-Islanding Protection.

Introduction

The RPS-7000 is a high-performance regenerative AC/DC power source and load system designed for advanced power testing applications. It supports four-quadrant operation, enabling both source and load functions with energy recovery back to the grid. With power ratings from 9kVA to 22.5kVA per unit and up to 225kVA through parallel operation, the RPS-7000

Figure 1: More Current. Fewer Units.

delivers high current, precise waveform control, and reliable performance for AI servers, EV charging, energy storage, and power electronics validation. Available configurations include G Series, L Series, S Series, and B Series.

Applications

The RPS-7000 Series provides comprehensive testing support for modern power electronics R&D and production. In the renewable energy sector, it serves as a critical tool for testing Solar PV inverters, Power Conversion Systems (PCS), and Energy Storage Systems (ESS), enabling precise grid anomaly simulation and efficient energy recovery. Its 4-quadrant operation is also ideal for verifying the bidirectional charging and discharging performance of On-board Chargers (OBC/BOBC) and various V2G, V2H, and V2X equipment.

For digital infrastructure, the RPS-7000 is an optimized power solution for AI servers, Data Centers, and High-Voltage Direct Current (HVDC) applications. Supporting AC, DC, and AC+DC modes, it accurately simulates the voltage ripples and load transients of high-voltage DC buses, ensuring the power stability of high-density computing hardware. Furthermore, the built-in regulatory waveform library automates compliance testing for IEEE 1547 and UL 1741, facilitating everything from basic performance verification to advanced Power Hardware-in-the-Loop (PHIL) simulations.

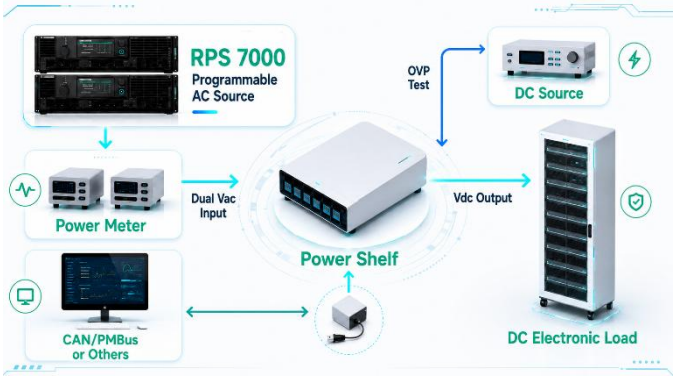


Figure 2: Power Shelf Test Architecture

Constant Power and High Current output

The RPS-7000 utilizes next-generation SiC MOS technology, supporting voltages up to 400 V_{L-N}, and for higher voltage applications such as wind power systems, line voltages up to 690 V_{L-L}. Its constant power output capability ensures high current at low output voltages and low current at high output voltages, eliminating the need for manual switching between high and low voltage ranges. Compared to traditional systems that experience output interruptions during range transitions, the RPS-7000 provides seamless operation for real-world applications.

The optimized power stage increases maximum output current by 35% and delivers 100% full-power output at 200–220 Vac without derating. Unlike conventional programmable power systems, which may be limited to 80%, 60%, or even 0% output capability under the same low-voltage conditions, the RPS-7000 maintains full performance for demanding high-current applications. This architecture enables reliable testing of AI server power supplies, EV charging systems, battery platforms, and next-generation power electronics while maximizing usable output power.

Figure 3: Full Power Across the Voltage Range

Parallel Connection for High Power

The RPS-7000 supports multi-unit parallel operation to increase power output rating, meeting a wide range of testing requirements. Using real-time active current-sharing technology powered by a Digital Signal Processor (DSP) and high-speed communication, the system can achieve up to 225 kVA of total power. When operating in parallel, all functionalities and precision remain unaffected. Additionally, the units can be connected with a single cable, and upon enabling the parallel mode, the system automatically configures itself without requiring complex additional setup.

Intuitive Control & Advanced Analysis

The RPS-7000 features a 5-inch touchscreen paired with a physical rotary knob, providing an intuitive interface for seamless switching between waveform editing, real-time measurements, and regulatory configurations. This user-friendly design allows for rapid system familiarization and efficient operation across diverse testing environments.

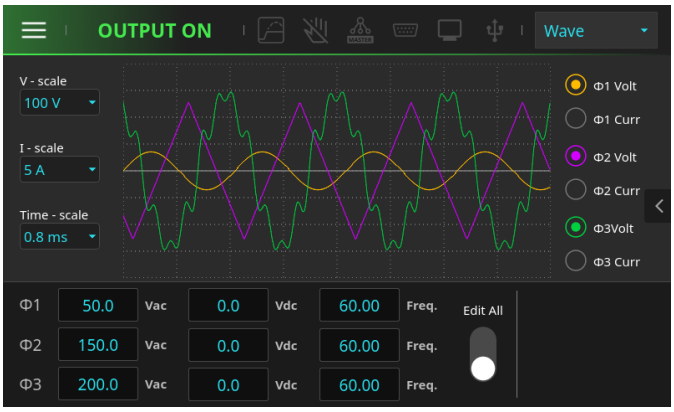


Figure 4: Waveform Monitoring Function

For optimized product design, the RPS-7000 integrates real-time waveform monitoring and high-precision harmonic analysis, eliminating the need for external oscilloscopes. It can simultaneously capture and display three-phase voltage and current waveforms, providing immediate visibility into system performance.

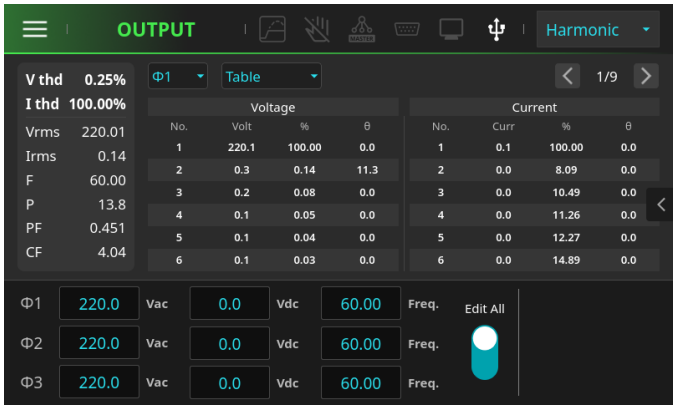


Figure 5: Harmonic Real-time Analysis List

The series also offers advanced diagnostic capabilities, including total harmonic distortion (THD)

measurement and detailed analysis up to the 50th harmonic. By providing precise amplitude and phase data for individual harmonic components, the RPS-7000 empowers engineers to accurately identify and mitigate interference, ensuring the highest level of power quality and compliance.

AC/DC Load Simulation

The RPS-7000 Model L regenerative electronic load is suitable for a wide range of renewable energy testing applications. In addition to basic functions such as constant current, constant power, and constant impedance, it supports advanced load simulation capabilities, including inductive and capacitive load emulation, as shown in Figure 6. Users can simulate complex load scenarios to accurately test device performance under varying voltage and current conditions, including load angles, load removal, and cycle settings.

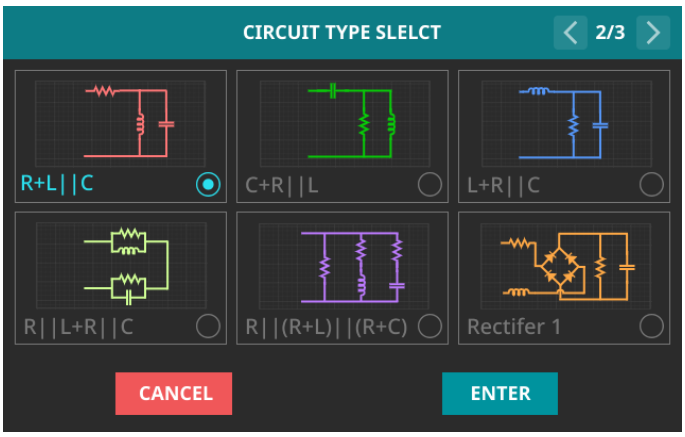


Figure 6: Multi-Mode Load Simulation

Moreover, its unique integrated harmonic and disturbance simulation can generate various harmonic components to evaluate the power supply's capability to handle diverse harmonic loads.

Combined with the versatility of AC/DC load simulation, the RPS-7000 Model L meets diverse application needs, such as testing electric vehicle supply equipment (EVSE), onboard chargers (OBC), and uninterruptible power supplies (UPS). Its regenerative design eliminates the energy wastage and cooling requirements typical of traditional resistive loads, significantly enhancing efficiency.

Arbitrary waveform Editing

RPS-7000 Series provides advanced programmable power simulation for R&D, compliance, and laboratory applications. It supports List, Step, Pulse, Transient, Harmonic Synthesis, and Inter-Harmonic modes with independent phase control, enabling flexible test scenarios while supporting compliance verification to standards including IEC 61000-4-3, IEC 61000-4-11, UL 1741 SA, IEEE 1547, and IEC 62116.

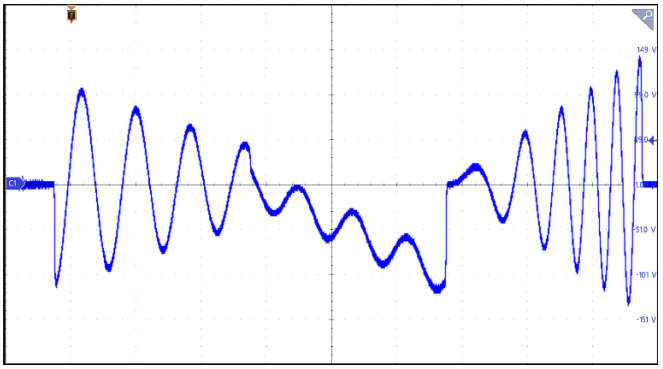


Figure 7: List Mode Waveform

Step mode, which incrementally adjusts voltage or frequency to evaluate the device's response under different conditions. Pulse mode, which generates short-duration high-voltage or high-current pulses for surge testing. Additionally, the Inter-Harmonic mode simulates harmonic disturbances in power systems to assess the device's tolerance to harmonic interference, while the Transient mode replicates instantaneous power system responses to test the device's ability to handle rapid changes effectively. Synthesis mode provides flexible custom waveform design functions.

Users can use the intuitive programming

interface to accurately adjust the amplitude and phase of each harmonic order to generate a multi-order harmonic composite waveform. This mode supports up to 50th order harmonic components, helping testers simulate non-sinusoidal power environments to meet different testing needs.

PowerVUE Remote Control Software

The RPS-7000 is equipped with PC-based software, PowerVUE, which allows users to operate the device directly from their PC. With PowerVUE, users can easily adjust parameters, monitor performance, quickly create test programs, and generate reports. The software also provides pre-configured test modes for standards such as IEC 61000-4-11, 4-13, 4-14, 4-28, and 4-34. This enables users to operate the system according to regulation-defined parameters, ensuring compliance with various international standards.

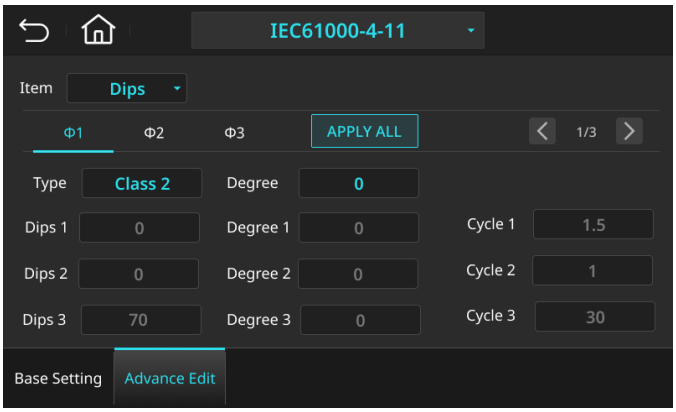


Figure 9: IEC61000-4-11 Dips Setting

Standard SCPI & LabVIEW driver support

The RPS-7000 supports the SCPI standard protocol, enabling seamless integration into existing test systems via GPIB, LAN, or External IO interfaces using SCPI commands without requiring complex modifications. Additionally, the RPS-7000 supports LabVIEW for testing, measurement, and control applications.

AIoT Intelligent Predictive Diagnostics

PowerSense AI enables real-time health monitoring and Predictive Preventive Service (PPS), continuously analyzing system behavior to detect hidden risks before failure occurs. By identifying abnormal trends in power modules, cooling systems, and operational parameters, it helps maximize equipment availability beyond 95%, reduce unplanned downtime, and protect critical R&D schedules.

Figure 10: PowerSense Predictive Diagnostics

Certified Manufacturing Excellence

Manufactured in Taiwan under IEC 62443-4-1, TL 9000, ISO 27001, and IATF 16949 certified systems. Every RPS-7000 Series unit undergoes rigorous engineering verification and validation workflows aligned with TÜV standards, ensuring consistent performance, production quality, and long-term reliability in demanding test environments.

Figure 11: Certified Quality & Engineering Validation

Model	Output Voltage Vac		Output Current (Aac)		Output Power (Pac)	Phase	Height
	V L-N	V L-L	Arms(1Ø)	Arms(3Ø)			
RPS-7009	350V	606V	96A	32A	9kVA	3Ø,1Ø,Split phase	3U
RPS-7012	350V	606V	105A	35A	12kVA	3Ø,1Ø,Split phase	3U
RPS-7015	350V	606V	120A	40A	15kVA	3Ø,1Ø,Split phase	3U
RPS-7018	350V	606V	144A	48A	18kVA	3Ø,1Ø,Split phase	3U
RPS-7022	350V	606V	144A	48A	22.5kVA	3Ø,1Ø,Split phase	3U
RPS-7045	350V	606V	288A	96A	45kVA	3Ø,1Ø,Split phase	6U
RPS-7067	350V	606V	432A	144A	67.5kVA	3Ø,1Ø,Split phase	15U
RPS-7090	350V	606V	576A	192A	90kVA	3Ø,1Ø,Split phase	25U
RPS-7112	350V	606V	720A	240A	112.5kVA	3Ø,1Ø,Split phase	25U
RPS-7225	350V	606V	1440A	480A	225kVA	3Ø,1Ø,Split phase	42U

Engineered for the Next Power Era

- **+30% Power Density**
- **+35% Output Current**
- **Up to 90% Efficiency**
- **0% derating across 220V to 480V**
- **Advanced Arbitrary Waveform Control**
- **AIoT-Driven Predictive Monitoring & Maintenance**

RPS7225: 225kVA 42U

Conventional System Size

RPS7112: 112kVA 25U

RPS7045: 45kVA 6U
RPS7067: 67kVA 15U

Technical Specifications

Item				RPS-7012	RPS-7015	RPS-7018
AC INPUT	Phase			3Ø3W		
	Voltage			200 - 240 V_{L-L} ± 10% 380 - 400 V_{L-L} ± 10% 440 - 480 V_{L-L} ± 10%		
	Frequency			47 - 63Hz		
	Max. Current			47A/phase (200 - 240 VL-L ± 10%) 25A/phase (380 - 480 VL-L ± 10%)	58A/phase (200 - 240 VL-L ± 10%) 31A/phase (380 - 480 VL-L ± 10%)	70A/phase (200 - 240 VL-L ± 10%) 38A/phase (380 - 480 VL-L ± 10%)
	Power Factor(*1)			0.99(Typical)		
AC OUTPUT	Phase Modes			3Ø, 1Ø or Split phase selectable		
	Max. Power			12kVA/8kVA(Split phase)	15kVA/10kVA(Split phase)	18kVA/12kVA(Split phase)
	Per Phase/Channel			4kVA	5kVA	6kVA
AC VOLTAGE	Range			0 - 350V_{L-N}, 0 - 606V_{L-L}, 0-700V_{L-L}(Split phase) Option : 0 - 400V_{L-N}, 0 - 692V_{L-L}, 0-800V_{L-L}(Split phase)		
	Resolution			0.1V		
	Setting Accuracy			± (0.1% of setting + 0.2% F.S.)		
	Total Harmonic Distortion (THD)(*2)			<0.5% @ 50/60Hz <1% @ 30-1000Hz		
	Line Regulation (*3)			± 0.1%		
	Load Regulation (*4)			± 0.2%		
	Phase Angle	Range		0 - 359.9°		
		Resolution		0.1°		
MAX. AC CURRENT	RMS(*5)			105A(1Ø)/35A(3Ø/Split)	120A(1Ø)/40A(3Ø/Split)	144A(1Ø)/48A(3Ø/Split)
	Peak			315A(1Ø)/105A(3Ø/Split)	360A(1Ø)/120A(3Ø/Split)	432A(1Ø)/144A(3Ø/Split)
	Crest Factor			3	3	3
FREQUENCY	Range			DC, 30.00 – 150.0 Hz Option : DC, 30.00 - 1000.0 Hz		
	Resolution			0.01Hz		
	Accuracy(*6)			± 0.01% F.S		
DC OUTPUT	Max. Power			12kW/8kW (Split phase)	15kW/10kW(Split phase)	18kW/12kW(Split phase)
	Per Phase/Channel			4kW	5kW	6kW
DC VOLTAGE	Range			±495VDC, ±990VDC(Split phase) Option : ±565VDC, ±1130VDC(Split phase)		
	Resolution			0.1V		
	Setting Accuracy			± (0.1 % of setting + 0.2% F.S.)		
MAX. DC CURRENT	Range			78.75A(1Ø)/26.25A(3Ø/Split)	90A(1Ø)/30A(3Ø/Split)	108A(1Ø)/36A(3Ø/Split)
HARMONIC SYNTHESIS FUNCTION	up to 50 Harmonic orders @ 50/60Hz fundamental frequency					
REGENERATIVE FUNCTION	Current Total Harmonic Distortion (iTHD)(*7)			<6%(Typical)	<5%(Typical)	<5%(Typical)
	Power Factor(*8)			>0.97(Typical)		
CURRENT LIMIT FUNCTION	Setting	Range	1Ø	0.1 - 105A	0.1 - 120.0A	0.1 - 144.0A
			3Ø/Split phase	0.1 - 35A	0.1 - 40.0A	0.1 - 48.0A
		Resolution		0.1A		
		Accuracy		± (2.0% of setting + 0.5% F.S.)		
	Response Time			< 0.5s		
MEASUREMENT	Voltage (AC)	Range		0 - 350V_{L-N}, 0 - 606V_{L-L}, 0 – 700V_{L-L}(Split) Option : 0 - 400V_{L-N}, 0 - 692V_{L-L}, 0 – 800V_{L-L}(Split)		
		Resolution		0.01V		
		Accuracy		± (0.1% of reading + 0.2% F.S.) at Voltage > 5V		

Item				RPS-7012	RPS-7015	RPS-7018
MEASUREMENT	Voltage (DC)	Range		±495VDC, ±990VDC (Split phase) / Option : ±565VDC, ±1130VDC (Split phase)		
		Resolution		0.01V		
		Accuracy		± (0.1 % of reading + 0.2% F.S.) at Voltage > 5V		
	Current (AC,DC)	Range	1Ø	0.00 - 105.00A	0.00 - 120.00A	0.00 - 144.00A
			3Ø/Split phase	0.00 - 35.00A	0.00 - 40.00A	0.00 - 48.00A
		Resolution		0.01A		
		Accuracy		± (0.4% of reading + 0.3% F.S.)		
	Peak Current	Range	1Ø	0.0 - 315.0Apk	0.0 - 360.0Apk	0.0 - 432.0Apk
			3Ø/Split phase	0.0 - 105.0Apk	0.0 - 120.0Apk	0.0 - 144.0Apk
		Resolution		0.1A		
		Accuracy		± (0.4% of reading + 0.6% F.S.)		
	Power (AC,DC)	Range	1Ø	0.0W - 12kW	0.0W - 15kW	0.0W - 18kW
			3Ø	0.0W - 4kW	0.0W - 5kW	0.0W - 6kW
			Split phase	0.0W - 8kW	0.0W - 10kW	0.0W - 12kW
		Resolution		0.1W at 0.0 - 9999.9W / 1W at Power ≧10000W		
		Accuracy		± (0.4% of reading + 0.4% F.S.)		
	Power Apparent (VA)	Range	1Ø	0.0W - 12kVA	0.0W - 15kVA	0.0W – 18kVA
			3Ø	0.0W – 4kVA	0.0W – 5kVA	0.0W - 6kVA
			Split phase	0.0W – 8kVA	0.0W – 10kVA	0.0W – 12kVA
		Resolution		0.1VA at 0.0 - 9999.9VA / 1VA at Power ≧10000VA		
		Accuracy		V×A, Calculated value		
	Power Factor	Range		0 -1.000		
		Resolution		0.001		
		Accuracy		W / VA ,Calculated and displayed to three significant digits		
	Crest Factor	Range		0 - 10.00		
		Resolution		0.01		
		Accuracy		Ap / A ,Calculated and displayed to two significant digits		
GENERAL	Interface			USB, Ethernet, External I/O(DB25), Option: GPIB, CAN Bus		
	Display			Full Color, Touch LCD Display, 5” Diagonal size, 800 x 400 Pixels resolution		
	Protection			OCP, OVP, OPP, OTP, SHORT, FAN		
	V Sense			Yes		
	Efficiency (*9)			90% (Typical)		
	Dimension(H x W x D)			132.8 x 432 x 718 mm		
	Weight			60kg		
ENVIRONMENTAL	Cooling			Variable speed fan cooled, front intake, rear exhaust		
	Operating Temperature			0 to 40°C		
	Storage Temperature			-40 to 85°C		
	Altitude			2000m (6500 feet)		
	Operating Humidity(*10)			0% to 95% RAH		
REGULATORY COMPLIANCE	Safety			Low Voltage Directive 2014/30/EU, EN 61010-1:2017		
	EMC			CE marked for EMC Directive 2014/30/EU per EN 61326-1:2013 Class A		
	CE Mark LVD Categories			Installation Overvoltage Category: ll; Pollution Degree: 2; indoor use only.		

Note.

*1 Tested on input voltage 380Vac with full output power
*2 Maximum distortion is tested on output voltage 350Vac with full output power under linear load
*3 With respect to changes in the rated range of input voltage.
*4 Load regulation is tested by sine wave and remote sense
*5 At working voltage 125V
*6 When the output voltage is greater than 40V
*7 Current total harmonic distortion is tested on input voltage 220Vac with full output power
*8 Power factor is tested on input voltage 220Vac with full output power
*9 Efficiency is tested on input voltage 380V and output voltage 250Vac with full output power under linear load
*10 In the state of non-condensing

The above specifications are subject to change without prior notice.

AC Load Function			RPS-7012	RPS-7015	RPS-7018
CC Mode (each phase)	Current	Range	0 - 35A	0 - 40A	0 - 48A
		Resolution	0.01A		
		Accuracy	± (0.3% of setting + 0.5% F.S.) at Current > 1.5A		
	Crest Factor	Range	1.414 - 3.000		
		Resolution	0.001		
	Power Factor	Range	0.593 - 1.000(type=PF) / 0.202 - 1.000(type=CFPF)		
		Resolution	0.001		
CP/CS Mode (each phase)	POWER	Range	0 - 4kW, kVA	0 - 5kW, kVA	0 - 6kW, kVA
		Resolution	1W, VA		
		Accuracy	± (0.3% of setting + 0.3% F.S.) at Power > 100W, VA		
	Crest Factor	Range	1.414 - 3.000		
		Resolution	0.001		
	Power Factor	Range	0.593 - 1.000(type=PF) / 0.202 - 1.000(type=CFPF)		
		Resolution	0.001		
CR Mode (each phase)	Resistance	Range	0.45 - 525Ω		
		Resolution	0.01Ω		
		Accuracy	± (0.3% of reading + 0.5% F.S.) at Current > 1.5A		
CZ Mode (each phase)	Impedance	R1 Range	0.01 - 1000Ω		
		R1 Resolution	0.01Ω		
		R2 Range	0.01 - 1000Ω		
		R2 Resolution	0.01Ω		
		R3 Range	0.01 - 1000Ω		
		R3 Resolution	0.01Ω		
		C Range	0.001 - 100.000mF		
		C Resolution	0.001mF		
		L Range	0 - 1000.000mH		
		L Resolution	0.001mH		
DC Load Function			**RPS-7012**	**RPS-7015**	**RPS-7018**
CC Mode (each phase)	Current	Range	0 - 35A	0 - 36A	0 - 36A
		Resolution	0.01A		
		Accuracy	± (0.3% of setting + 0.5% F.S.) at Current > 1.5A		
CV Mode (each phase)	Voltage	Range	20 - 495V		
		Resolution	0.01V		
		Accuracy	± (0.1% of setting + 0.2% F.S.) at Voltage > 20V		
CP Mode (each phase)	Power	Range	0 - 4kW	0 - 5kW	0 - 6kW
		Resolution	1W		
		Accuracy	± (0.3% of setting + 0.3% F.S.) at Power > 200W		
CR Mode (each phase)	Resistance	Range	0.45 - 742.5Ω		
		Resolution	0.01Ω		
		Accuracy	± (0.3% of reading + 0.5% F.S.) at Current > 1.5A		
Advanced Mode (each phase)	Mode		CCD, CRD		

Technical Specifications

Item				RPS-7022	RPS-7045
AC INPUT	Phase			3Ø3W	
	Voltage			380 - 400 V_{L-L} ± 10% 440 - 480 V_{L-L} ± 10%	
	Frequency			47 - 63Hz	
	Max. Current			54A/phase (380 - 480 VL-L ± 10%)	108A/phase (380 - 480 VL-L ± 10%)
	Power Factor(*1)			0.99(Typical)	
AC OUTPUT	Phase Modes			3Ø, 1Ø or Split phase selectable	
	Max. Power			22.5kVA/15kVA(Split phase)	45kVA/30kVA(Split phase)
	Per Phase/Channel			7.5kVA	15kVA
AC VOLTAGE	Range			0 - 350V_{L-N}, 0 - 606V_{L-L}, 0-700V_{L-L}(Split phase) Option : 0 - 400V_{L-N}, 0 - 692V_{L-L}, 0-800V_{L-L}(Split phase)	
	Resolution			0.1V	
	Setting Accuracy			± (0.1% of setting + 0.2% F.S.)	
	Total Harmonic Distortion (THD)(*2)			<0.5% @ 50/60Hz <1% @ 30-1000Hz	
	Line Regulation (*3)			± 0.1%	
	Load Regulation (*4)			± 0.2%	
	Phase Angle	Range		0 - 359.9˚	
		Resolution		0.1˚	
MAX. AC CURRENT	RMS(*5)			144A(1Ø)/48A(3Ø/Split)	288A(1Ø)/96A(3Ø/Split)
	Peak			432A(1Ø)/144A(3Ø/Split)	864A(1Ø)/288A(3Ø/Split)
	Crest Factor			3	3
FREQUENCY	Range			DC, 30.00 – 150.0 Hz Option : DC, 30.00 - 1000.0 Hz	
	Resolution			0.01Hz	
	Accuracy(*6)			± 0.01% F.S	
DC OUTPUT	Max. Power			22.5kW/15kW (Split phase)	45kW/30kW(Split phase)
	Per Phase/Channel			7.5kW	15kW
DC VOLTAGE	Range			±495VDC, ±990VDC(Split phase) Option : ±565VDC, ±1130VDC(Split phase)	
	Resolution			0.1V	
	Setting Accuracy			± (0.1 % of setting + 0.2% F.S.)	
MAX. DC CURRENT	Range			108A(1Ø)/36A(3Ø/Split)	216A(1Ø)/72A(3Ø/Split)
HARMONIC SYNTHESIS FUNCTION	up to 50 Harmonic orders @ 50/60Hz fundamental frequency				
REGENERATIVE FUNCTION	Current Total Harmonic Distortion (iTHD)(*7)			<6%(Typical)	<5%(Typical)
	Power Factor(*8)			>0.97(Typical)	
CURRENT LIMIT FUNCTION	Setting	Range	1Ø	0.1 - 144.0A	0.1 - 288.0A
			3Ø/Split phase	0.1 - 48.0A	0.1 - 96.0A
		Resolution		0.1A	
		Accuracy		± (2.0% of setting + 0.5% F.S.)	
	Response Time			< 0.5s	
MEASUREMENT	Voltage (AC)	Range		0 - 350V_{L-N}, 0 - 606V_{L-L}, 0 – 700V_{L-L}(Split) Option : 0 - 400V_{L-N}, 0 - 692V_{L-L}, 0 – 800V_{L-L}(Split)	
		Resolution		0.01V	
		Accuracy		± (0.1% of reading + 0.2% F.S.) at Voltage > 5V	

Item				RPS-7022	RPS-7045
MEASUREMENT	Voltage (DC)	Range		±495VDC, ±990VDC (Split phase) / Option : ±565VDC, ±1130VDC (Split phase)	
		Resolution		0.01V	
		Accuracy		± (0.1 % of reading + 0.2% F.S.) at Voltage > 5V	
	Current (AC,DC)	Range	1Ø	0.00 - 144.00A	0.00 - 288.00A
			3Ø/Split phase	0.00 - 48.00A	0.00 - 96.00A
		Resolution		0.01A	
		Accuracy		± (0.4% of reading + 0.3% F.S.)	
	Peak Current	Range	1Ø	0.0 - 432.0Apk	0.0 - 864.0Apk
			3Ø/Split phase	0.0 - 144.0Apk	0.0 - 288.0Apk
		Resolution		0.1A	
		Accuracy		± (0.4% of reading + 0.6% F.S.)	
	Power (AC,DC)	Range	1Ø	0.0W – 22.5kW	0.0W - 45kW
			3Ø	0.0W – 7.5kW	0.0W - 15kW
			Split phase	0.0W - 15kW	0.0W - 30kW
		Resolution		0.1W at 0.0 - 9999.9W / 1W at Power ≧10000W	
		Accuracy		± (0.4% of reading + 0.4% F.S.)	
	Power Apparent (VA)	Range	1Ø	0.0W – 22.5kVA	0.0W – 45kVA
			3Ø	0.0W – 7.5kVA	0.0W - 15kVA
			Split phase	0.0W – 15kVA	0.0W – 30kVA
		Resolution		0.1VA at 0.0 - 9999.9VA / 1VA at Power ≧10000VA	
		Accuracy		V×A, Calculated value	
	Power Factor	Range		0 -1.000	
		Resolution		0.001	
		Accuracy		W / VA ,Calculated and displayed to three significant digits	
	Crest Factor	Range		0 - 10.00	
		Resolution		0.01	
		Accuracy		Ap / A ,Calculated and displayed to two significant digits	
GENERAL	Interface			USB, Ethernet, External I/O(DB25), Option: GPIB, CAN Bus	
	Display			Full Color, Touch LCD Display, 5” Diagonal size, 800 x 400 Pixels resolution	
	Protection			OCP, OVP, OPP, OTP, SHORT, FAN	
	V Sense			Yes	
	Efficiency (*9)			90% (Typical)	
	Dimension(H x W x D)			132.8 x 432 x 718 mm	265.6 x 432 x 718 mm
	Weight			60kg	150kg
ENVIRONMENTAL	Cooling			Variable speed fan cooled, front intake, rear exhaust	
	Operating Temperature			0 to 40°C	
	Storage Temperature			-40 to 85°C	
	Altitude			2000m (6500 feet)	
	Operating Humidity(*10)			0% to 95% RAH	
REGULATORY COMPLIANCE	Safety			Low Voltage Directive 2014/30/EU, EN 61010-1:2017	
	EMC			CE marked for EMC Directive 2014/30/EU per EN 61326-1:2013 Class A	
	CE Mark LVD Categories			Installation Overvoltage Category: II; Pollution Degree: 2; indoor use only.	

Note.

*1 Tested on input voltage 380Vac with full output power
*2 Maximum distortion is tested on output voltage 350Vac with full output power under linear load
*3 With respect to changes in the rated range of input voltage.
*4 Load regulation is tested by sine wave and remote sense
*5 At working voltage 125V

The above specifications are subject to change without prior notice.

*6 When the output voltage is greater than 40V
*7 Current total harmonic distortion is tested on input voltage 220Vac with full output power
*8 Power factor is tested on input voltage 220Vac with full output power
*9 Efficiency is tested on input voltage 380V and output voltage 250Vac with full output power under linear load
*10 In the state of non-condensing

AC Load Function (RPS-7022)			
CC Mode (each phase)	Current	Range	0 – 48A
		Resolution	0.01A
		Accuracy	± (0.3% of setting + 0.5% F.S.) at Current > 1.5A
	Crest Factor	Range	1.414 - 3.000
		Resolution	0.001
	Power Factor	Range	0.593 - 1.000(type=PF) / 0.202 - 1.000(type=CFPF)
		Resolution	0.001
CP/CS Mode (each phase)	POWER	Range	0 – 7.5kW, kVA
		Resolution	1W, VA
		Accuracy	± (0.3% of setting + 0.3% F.S.) at Power > 100W, VA
	Crest Factor	Range	1.414 - 3.000
		Resolution	0.001
	Power Factor	Range	0.593 - 1.000(type=PF) / 0.202 - 1.000(type=CFPF)
		Resolution	0.001
CR Mode (each phase)	Resistance	Range	0.45 - 525Ω
		Resolution	0.01Ω
		Accuracy	± (0.3% of reading + 0.5% F.S.) at Current > 1.5A
CZ Mode (each phase)	Impedance	R1 Range	0.01 - 1000Ω
		R1 Resolution	0.01Ω
		R2 Range	0.01 - 1000Ω
		R2 Resolution	0.01Ω
		R3 Range	0.01 - 1000Ω
		R3 Resolution	0.01Ω
		C Range	0.001 - 100.000mF
		C Resolution	0.001mF
		L Range	0 - 1000.000mH
		L Resolution	0.001mH
DC Load Function (RPS-7022)			
CC Mode (each phase)	Current	Range	0 - 36A
		Resolution	0.01A
		Accuracy	± (0.3% of setting + 0.5% F.S.) at Current > 1.5A
CV Mode (each phase)	Voltage	Range	20 - 495V
		Resolution	0.01V
		Accuracy	± (0.1% of setting + 0.2% F.S.) at Voltage > 20V
CP Mode (each phase)	Power	Range	0 – 7.5kW, kVA
		Resolution	1W
		Accuracy	± (0.3% of setting + 0.3% F.S.) at Power > 200W
CR Mode (each phase)	Resistance	Range	0.45 - 742.5Ω
		Resolution	0.01Ω
		Accuracy	± (0.3% of reading + 0.5% F.S.) at Current > 1.5A
Advanced Mode (each phase)	Mode		CCD, CRD

Technical Specifications

Item				RPS-7067	RPS-7090
AC INPUT	Phase			3Ø3W	
	Voltage			380 - 400 V_{L-L} ± 10% 440 - 480 V_{L-L} ± 10%	
	Frequency			47 - 63Hz	
	Max. Current			162A/phase (380 - 480 VL-L ± 10%)	216A/phase (380 - 480 VL-L ± 10%)
	Power Factor(*1)			0.99(Typical)	
AC OUTPUT	Phase Modes			3Ø, 1Ø or Split phase selectable	
	Max. Power			67.5kVA/45kVA(Split phase)	90kVA/60kVA(Split phase)
	Per Phase/Channel			22.5kVA	30kVA
AC VOLTAGE	Range			0 - 350V_{L-N}, 0 - 606V_{L-L}, 0-700V_{L-L}(Split phase) Option : 0 - 400V_{L-N}, 0 - 692V_{L-L}, 0-800V_{L-L}(Split phase)	
	Resolution			0.1V	
	Setting Accuracy			± (0.1% of setting + 0.2% F.S.)	
	Total Harmonic Distortion (THD)(*2)			<0.5% @ 50/60Hz <1% @ 30-1000Hz	
	Line Regulation (*3)			± 0.1%	
	Load Regulation (*4)			± 0.2%	
	Phase Angle	Range		0 - 359.9˚	
		Resolution		0.1˚	
MAX. AC CURRENT	RMS(*5)			432A(1Ø)/144A(3Ø/Split)	576A(1Ø)/192A(3Ø/Split)
	Peak			1296A(1Ø)/432A(3Ø/Split)	1728A(1Ø)/576A(3Ø/Split)
	Crest Factor			3	3
FREQUENCY	Range			DC, 30.00 – 150.0 Hz Option : DC, 30.00 - 1000.0 Hz	
	Resolution			0.01Hz	
	Accuracy(*6)			± 0.01% F.S	
DC OUTPUT	Max. Power			67.5kW/45kW (Split phase)	90kW/60kW(Split phase)
	Per Phase/Channel			22.5kW	30kW
DC VOLTAGE	Range			±495VDC, ±990VDC(Split phase) Option : ±565VDC, ±1130VDC(Split phase)	
	Resolution			0.1V	
	Setting Accuracy			± (0.1 % of setting + 0.2% F.S.)	
MAX. DC CURRENT	Range			324A(1Ø)/108A(3Ø/Split)	432A(1Ø)/144A(3Ø/Split)
HARMONIC SYNTHESIS FUNCTION	up to 50 Harmonic orders @ 50/60Hz fundamental frequency				
REGENERATIVE FUNCTION	Current Total Harmonic Distortion (iTHD)(*7)			<6%(Typical)	<5%(Typical)
	Power Factor(*8)			>0.97(Typical)	
CURRENT LIMIT FUNCTION	Setting	Range	1Ø	0.1 - 432.0A	0.1 - 576.0A
			3Ø/Split phase	0.1 - 144.0A	0.1 - 192.0A
		Resolution		0.1A	
		Accuracy		± (2.0% of setting + 0.5% F.S.)	
	Response Time			< 0.5s	
MEASUREMENT	Voltage (AC)	Range		0 - 350V_{L-N}, 0 - 606V_{L-L}, 0 – 700V_{L-L}(Split) Option : 0 - 400V_{L-N}, 0 - 692V_{L-L}, 0 – 800V_{L-L}(Split)	
		Resolution		0.01V	
		Accuracy		± (0.1% of reading + 0.2% F.S.) at Voltage > 5V	

Item				RPS-7067	RPS-7090
MEASUREMENT	Voltage (DC)	Range		±495VDC, ±990VDC (Split phase) / Option : ±565VDC, ±1130VDC (Split phase)	
		Resolution		0.01V	
		Accuracy		± (0.1 % of reading + 0.2% F.S.) at Voltage > 5V	
	Current (AC,DC)	Range	1Ø	0.00 - 432.00A	0.00 - 576.00A
			3Ø/Split phase	0.00 - 144.00A	0.00 - 192.00A
		Resolution		0.01A	
		Accuracy		± (0.4% of reading + 0.3% F.S.)	
	Peak Current	Range	1Ø	0.0 - 1296.0Apk	0.0 - 1728.0Apk
			3Ø/Split phase	0.0 - 432.0Apk	0.0 - 576.0Apk
		Resolution		0.1A	
		Accuracy		± (0.4% of reading + 0.6% F.S.)	
	Power (AC,DC)	Range	1Ø	0.0W – 67.5kW	0.0W - 90kW
			3Ø	0.0W – 22.5kW	0.0W - 30kW
			Split phase	0.0W - 45kW	0.0W - 60kW
		Resolution		0.1W at 0.0 - 9999.9W / 1W at Power ≧10000W	
		Accuracy		± (0.4% of reading + 0.4% F.S.)	
	Power Apparent (VA)	Range	1Ø	0.0W – 67.5kVA	0.0W – 90kVA
			3Ø	0.0W – 22.5kVA	0.0W - 30kVA
			Split phase	0.0W – 45kVA	0.0W – 60kVA
		Resolution		0.1VA at 0.0 - 9999.9VA / 1VA at Power ≧10000VA	
		Accuracy		V×A, Calculated value	
	Power Factor	Range		0 -1.000	
		Resolution		0.001	
		Accuracy		W / VA ,Calculated and displayed to three significant digits	
	Crest Factor	Range		0 - 10.00	
		Resolution		0.01	
		Accuracy		Ap / A ,Calculated and displayed to two significant digits	
GENERAL	Interface			USB, Ethernet, External I/O(DB25), Option: GPIB, CAN Bus	
	Display			Full Color, Touch LCD Display, 5” Diagonal size, 800 x 400 Pixels resolution	
	Protection			OCP, OVP, OPP, OTP, SHORT, FAN	
	V Sense			Yes	
	Efficiency (*9)			90% (Typical)	
	Dimension(H x W x D)			845 x 600 x 1100 mm	1290 x 600 x 1100 mm
	Weight			235kg	325kg
ENVIRONMENTAL	Cooling			Variable speed fan cooled, front intake, rear exhaust	
	Operating Temperature			0 to 40°C	
	Storage Temperature			-40 to 85°C	
	Altitude			2000m (6500 feet)	
	Operating Humidity(*10)			0% to 95% RAH	
REGULATORY COMPLIANCE	Safety			Low Voltage Directive 2014/30/EU, EN 61010-1:2017	
	EMC			CE marked for EMC Directive 2014/30/EU per EN 61326-1:2013 Class A	
	CE Mark LVD Categories			Installation Overvoltage Category: II; Pollution Degree: 2; indoor use only.	

Note.

*1 Tested on input voltage 380Vac with full output power
*2 Maximum distortion is tested on output voltage 350Vac with full output power under linear load
*3 With respect to changes in the rated range of input voltage.
*4 Load regulation is tested by sine wave and remote sense
*5 At working voltage 125V

The above specifications are subject to change without prior notice.

*6 When the output voltage is greater than 40V
*7 Current total harmonic distortion is tested on input voltage 220Vac with full output power
*8 Power factor is tested on input voltage 220Vac with full output power
*9 Efficiency is tested on input voltage 380V and output voltage 250Vac with full output power under linear load
*10 In the state of non-condensing

Technical Specifications

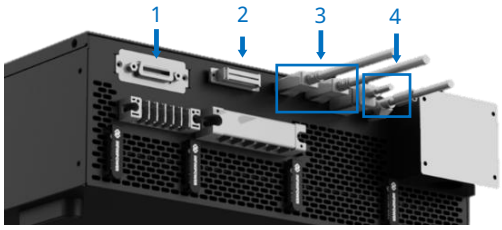
Item				RPS-7112	RPS-7225
AC INPUT	Phase			3Ø3W	
	Voltage			380 - 400 VL-L ± 10% 440 - 480 VL-L ± 10%	
	Frequency			47 - 63Hz	
	Max. Current			270A/phase (380 - 480 VL-L ± 10%)	540A/phase (380 - 480 VL-L ± 10%)
	Power Factor(*1)			0.99(Typical)	
AC OUTPUT	Phase Modes			3Ø, 1Ø or Split phase selectable	
	Max. Power			112.5kVA/75kVA(Split phase)	225kVA/150kVA(Split phase)
	Per Phase/Channel			37.5kVA	75kVA
AC VOLTAGE	Range			0 - 350VL-N, 0 - 606VL-L, 0-700VL-L(Split phase) Option : 0 - 400VL-N, 0 - 692VL-L, 0-800VL-L(Split phase)	
	Resolution			0.1V	
	Setting Accuracy			± (0.1% of setting + 0.2% F.S.)	
	Total Harmonic Distortion (THD)(*2)			<0.5% @ 50/60Hz <1% @ 30-1000Hz	
	Line Regulation (*3)			± 0.1%	
	Load Regulation (*4)			± 0.2%	
	Phase Angle	Range		0 - 359.9˚	
		Resolution		0.1˚	
MAX. AC CURRENT	RMS(*5)			720A(1Ø)/240A(3Ø/Split)	1440A(1Ø)/480A(3Ø/Split)
	Peak			2160A(1Ø)/720A(3Ø/Split)	4320A(1Ø)/1440A(3Ø/Split)
	Crest Factor			3	3
FREQUENCY	Range			DC, 30.00 – 150.0 Hz Option : DC, 30.00 - 1000.0 Hz	
	Resolution			0.01Hz	
	Accuracy(*6)			± 0.01% F.S	
DC OUTPUT	Max. Power			112.5kW/75kW (Split phase)	225kW/150kW (Split phase)
	Per Phase/Channel			37.5kW	75kW
DC VOLTAGE	Range			±495VDC, ±990VDC(Split phase) Option : ±565VDC, ±1130VDC(Split phase)	
	Resolution			0.1V	
	Setting Accuracy			± (0.1 % of setting + 0.2% F.S.)	
MAX. DC CURRENT	Range			540A(1Ø)/180A(3Ø/Split)	1080A(1Ø)/360A(3Ø/Split)
HARMONIC SYNTHESIS FUNCTION	up to 50 Harmonic orders @ 50/60Hz fundamental frequency				
REGENERATIVE FUNCTION	Current Total Harmonic Distortion (iTHD)(*7)			<6%(Typical)	<6%(Typical)
	Power Factor(*8)			>0.97(Typical)	
CURRENT LIMIT FUNCTION	Setting	Range	1Ø	0.1 - 720.0A	0.1 - 1440.0A
			3Ø/Split phase	0.1 - 240.0A	0.1 - 480.0A
		Resolution		0.1A	
		Accuracy		± (2.0% of setting + 0.5% F.S.)	
	Response Time			< 0.5s	

Item				RPS-7112	RPS-7225
MEASUREMENT	Voltage (DC)	Range		±495VDC, ±990VDC (Split phase) / Option : ±565VDC, ±1130VDC (Split phase)	
		Resolution		0.01V	
		Accuracy		± (0.1 % of reading + 0.2% F.S.) at Voltage > 5V	
	Current (AC,DC)	Range	1Ø	0.00 - 720.00A	0.00 - 1440.00A
			3Ø/Split phase	0.00 - 240.00A	0.00 - 480.00A
		Resolution		0.01A	
		Accuracy		± (0.4% of reading + 0.3% F.S.)	
	Peak Current	Range	1Ø	0.0 - 2160.0Apk	0.0 - 4320.0Apk
			3Ø/Split phase	0.0 - 720.0Apk	0.0 - 1440.0Apk
		Resolution		0.1A	
		Accuracy		± (0.4% of reading + 0.6% F.S.)	
	Power (AC,DC)	Range	1Ø	0.0W – 112.5kW	0.0W – 225kW
			3Ø	0.0W – 37.5kW	0.0W – 75kW
			Split phase	0.0W - 75kW	0.0W - 150kW
		Resolution		0.1W at 0.0 - 9999.9W / 1W at Power ≧10000W	
		Accuracy		± (0.4% of reading + 0.4% F.S.)	
	Power Apparent (VA)	Range	1Ø	0.0VA – 112.5kVA	0.0VA – 225kVA
			3Ø	0.0VA – 37.5kVA	0.0VA – 75kVA
			Split phase	0.0VA – 75kVA	0.0VA – 150kVA
		Resolution		0.1VA at 0.0 - 9999.9VA / 1VA at Power ≧10000VA	
		Accuracy		V×A, Calculated value	
	Power Factor	Range		0 -1.000	
		Resolution		0.001	
		Accuracy		W / VA ,Calculated and displayed to three significant digits	
	Crest Factor	Range		0 - 10.00	
		Resolution		0.01	
		Accuracy		Ap / A ,Calculated and displayed to two significant digits	
GENERAL	Interface			USB, Ethernet, External I/O(DB25), Option: GPIB, CAN Bus	
	Display			Full Color, Touch LCD Display, 5” Diagonal size, 800 x 400 Pixels resolution	
	Protection			OCP, OVP, OPP, OTP, SHORT, FAN	
	V Sense			Yes	
	Efficiency (*9)			90% (Typical)	
	Dimension(H x W x D)			1290 x 600 x 1100 mm	2045 x 600 x 1100 mm
	Weight			385kg	750kg
ENVIRONMENTAL	Cooling			Variable speed fan cooled, front intake, rear exhaust	
	Operating Temperature			0 to 40°C	
	Storage Temperature			-40 to 85°C	
	Altitude			2000m (6500 feet)	
	Operating Humidity(*10)			0% to 95% RAH	
REGULATORY COMPLIANCE	Safety			Low Voltage Directive 2014/30/EU, EN 61010-1:2017	
	EMC			CE marked for EMC Directive 2014/30/EU per EN 61326-1:2013 Class A	
	CE Mark LVD Categories			Installation Overvoltage Category: II; Pollution Degree: 2; indoor use only.	

Notes:
*1 Tested on input voltage 380Vac with full output power
*2 Maximum distortion is tested on output voltage 350Vac with full output power under linear load
*3 With respect to changes in the rated range of input voltage.
*4 Load regulation is tested by sine wave and remote sense
*5 At working voltage 125V
*6 When the output voltage is greater than 40V
*7 Current total harmonic distortion is tested on input voltage 220Vac with full output power
*8 Power factor is tested on input voltage 220Vac with full output power
*9 Efficiency is tested on input voltage 380V and output voltage 250Vac with full output power under linear load
*10 In the state of non-condensing

The above specifications are subject to change without prior notice.

RPS-7000 Dimensions



1 GPIB/CAN Optional Card
2 External I/O (AC_ON, FAULT-OUT, Ext-ON/OFF, etc.).
3 Parallel Communication Interface
4 Type-B USB, Network control interface

Ordering Information

RPS – 7018 G – D – 0 – 0

Series

Regenerative Power System

Power

012: 12kVA
015: 15kVA
018: 18kVA

Configuration

S : AC/DC Source
G : Grid Simulator
L : AC/DC Load
B : Grid Simulator + AC/DC Load

Input

D: Universal AC Input
A : 380-480 V_{L-L}
B : 200-220 V_{L-L} (*)

Optional Output Voltage

0 : Standard(350 VL-N)
1 : HV 400 VL-N(*)

Optional Output Frequency

0 : Standard(30 – 150Hz)
1 : HF 30-1000Hz(*)

* Special specifications, please contact the INFINIPOWER Tech. office or your local distributor
* 200–220 V L-L input available for RPS7018 parallel up to 180 kVA.

Accessories list

Typical Delivery Items	Optional accessories
■ Regenerative Power System	■ Parallel cable (Display port) (1.2m)
■ USB cable (Type A to Type B) (1.5m)	■ CAN Bus interface card / CAN Bus cable(1.5m)
■ LAN cable CAT5E(2m)	■ GPIB cable(1.5m)
■ DB25 adapter board (for I/O signal)	■ DB25 (male to male) adapter
■ Test Report	■ RPS-7000 series input power cable (3m)
■ Certificate of Compliance	■ Output voltage calibration fixture(Remote sense cable)
■ Output shorting adapter (for single phase mode)	

***** Special specifications, please contact the INFINIPOWER Tech. office or your local distributor

About INFINIPOWER

With 20+ years of R&D expertise in power testing, INFINIPOWER team delivers industry-leading solutions with trusted performance, precision, and stability. Backed by world-class manufacturing and TÜV certification, INFINIPOWER empowers customers—powering trust, driving innovation in the new energy era.

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Powering Trust, Driving Innovation

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