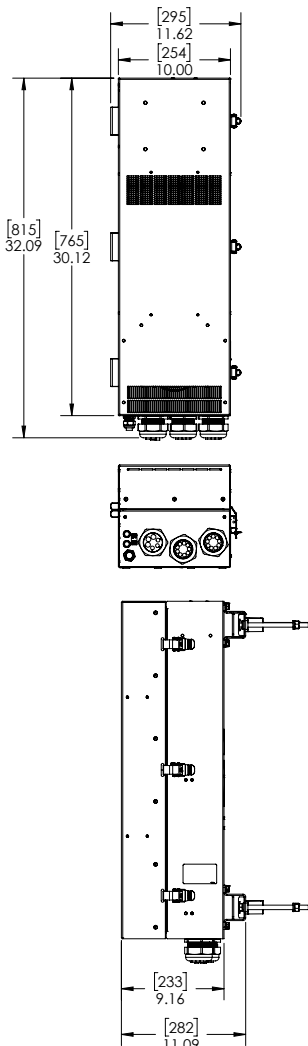


AC Disconnect with Integrated DC Power Supply for Small Cell Radio Heads

RUSAC-1AN2-P-240-1 • RUSAC-1AN2-P-240-2 • RUSAC-MOD-U

The RUSAC-1AN2-P-240 Series is an AC/DC Disconnect which integrates a DC power supply, AC and DC load centers, and surge protection on both the AC and DC circuits. The compact design makes it ideal for today's small cell radio systems. It employs Strikesorb® surge protection, capable of withstanding direct lightning currents up to 5kA (10/350 μ s), and induced surge currents up to 60 kA (8/20 μ s). The RUSAC-1AN2-P-240-1 and RUSAC-1AN2-P-240-2 provide protection for up to 6x AC circuits and 4x DC loads.



Strikesorb®



*RUSAC-MOD-U expands capacity
from 2kW to 4kW (@-53.5VDC)*

Features

- 100A main breaker
- 120/240VAC split phase configuration
- Up to six branch breakers providing (6) 120VAC circuits or (3) 240VAC circuits
- Employs the Strikesorb 30 Series Surge Protective Device (SPD)
 - The Strikesorb 30 Series are Class I SPDs, certified by VDE per the IEC 61643-11 standard as suitable for installation in areas where induced lightning exposure is expected
 - Strikesorb 30 Series withstand direct surge currents up to 5kA (10/350 μ s) and induced surge currents of up to 60kA (8/20)
 - Provides low let-through / clamping voltage - as it does not employ spark gaps or other switching elements
 - Strikesorb offers unique protection levels for wireless and small cell applications
- DC power supply capable of providing up to 2000 Watts @ -54VDC (RUSAC 1AN2-P-240-1)
 - Expandable to 4000 watts (RUSAC 1AN2-P-240-2)
- Externally visible indicator available for AC and DC
- 3x (M50) cable glands can be replaced with 1.5" conduit
- Mounting bracket included for pole mounting options
- Unistrut or wall mounting holes

Benefits

- Offers unique maintenance free protection
- Over current protection for up to 6x AC circuits and up to 4x DC circuits for customer use.
- Design allows easy installation and maintenance at the base of poles or towers
- Air-to-air heat-exchanger maintains closed loop NEMA Type 3 environment for equipment. Prevents ingress of contaminants and moisture

Basic Applications

- Telecommunications

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SPECIFICATIONS

Strikesorb®

AC Disconnect with Integrated DC Power Supply for Small Cell Radio Heads

RUSAC-1AN2-P-240-1 • RUSAC-1AN2-P-240-2 • RUSAC-MOD-U

Electrical

Model Number	RUSAC-1AN2-P-240-1	RUSAC-1AN2-P-240-2	RUSAC-MOD-U
Main Disconnect	100A main breaker	100A main breaker	
Number of AC Circuits	Available up to 6 for customer loads (2x 2-pole breakers feed rectifiers)	Available up to 6 for customer loads (2x 2-pole breakers feed rectifiers)	
AC Breakers	Up to six	Up to six	
Breaker Interrupt Rating (kAIC)	10kA	10kA	
DC Breakers	(4) 1-position for customer loads	(4) 1-position for customer loads	
Rated Power Output	(1) 2000W @-53.5VDC, 2000W Total	(2) 2000W @-53.5VDC, 4000W Total	(1) 2000W @-53.5VDC, 2000W Total
Rated Output Voltage	53.5 VDC \pm 0.1 VDC	53.5 VDC \pm 0.1 VDC	53.5 VDC \pm 0.1 VDC
Rated Output Current (DC)	35 Amps	70 Amps	35 Amps
Output Short Circuit Current Protected	Yes, long term with self-recovery	Yes, long term with self-recovery	Yes, long term with self-recovery
Input Voltage	110/220VAC	110/220VAC	110/220VAC
Input Nominal Voltage	Full DC Power (176-280VAC); 42% Power (85-175VAC)	Full DC Power (176-280VAC); 42% Power (85-175VAC)	Full DC Power (176-280VAC); 42% Power (85-175VAC)
Input Current THD	<5% @50% 176 load; <8% @20% load	<5% @50% 176 load; <8% @20% load	<5% @50% 176 load; <8% @20% load
Rated Power Per Rectifier	1x 2000W (176-290VAC); 830W (85-175VAC)	2x 2000W (176-290VAC)(4000W Total) 1660W (85-175VAC)	1x 2000W (176-290VAC); 830W (85-175VAC)
Power Factor	≥ 0.99 @220VAC (20%-100% load)	≥ 0.99 @220VAC (20%-100% load)	≥ 0.99 @220VAC (20%-100% load)
Efficiency	@230 VAC: $\geq 96\%$	@230 VAC: $\geq 96\%$	@230 VAC: $\geq 96\%$
Ripple Voltage	@200 mVp-p @25°C	@200 mVp-p @25°C	@200 mVp-p @25°C
Surge Protection Device (SPD) Type to UL	Strikesorb 30 Series	Strikesorb 30 Series	
Surge Protective Device (SPD) Type per UL 1449 4th Edition	Type 2 component assembly	Type 2 component assembly	
Surge Protection Device (SPD) Class to IEC 61643-11	Class I	Class I	
Nominal Operating Voltage [U _n]	120V / 240VAC split phase	120V / 240VAC split phase	
Nominal Discharge Current [I _n] per UL 1449 4th Edition	20 kA 8/20 μ s	20 kA 8/20 μ s	
Maximum Discharge Current [I _{max}] per IEC 61643-11	60 kA 8/20 μ s	60 kA 8/20 μ s	
Impulse Discharge Current [I _{imp}] per IEC 61643-11	5 kA 10/350 μ s	5 kA 10/350 μ s	
Maximum Continuous Operating Voltage [U _c] (MCOV)	150V per line	150V per line	
Voltage Protection Level [U _p] per IEC 61643-11	700V	700V	
Suppression Technology	MOV	MOV	

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SPECIFICATIONS

Strikesorb®

AC Disconnect with Integrated DC Power Supply
for Small Cell Radio Heads

RUSAC-1AN2-P-240-1 • RUSAC-1AN2-P-240-2 • RUSAC-MOD-U

Mechanical

Model Number	RUSAC-1AN2-P-240-1	RUSAC-1AN2-P-240-2	RUSAC-MOD-U	
Connection Terminal (Power)	Compression Lug #6 - #14 AWG (13 - 2mm²) Terminal Block #10-#26 AWG (6 - 0.14mm²)			
Environmental Ingress Protection (IP) Rating	NEMA Type 3			
Cooling Method	Closed-Loop air-to-air heat exchanger			
Operation Temperature (°C)	-40° C to +46° C			
Storage Temperature (°C)	-70° C to +80° C			
Enclosure Type (Outdoor)	Powder Coated Steel, NEMA Type 3			
Enclosure Dimension (L x W x H)	9.16" x 11.6" x 32.1" [233x 295 x 815mm]			
Weight	System w/ 1 Rectifier:	44 lbs (19.96 kg)	System w/ 2 Rectifiers: 48.7 lbs (22.09 kg)	Rectifier Module: 4.7 lbs (2.13 kg)
	Mount:	6 lbs (2.72 kg)	Mount:	6 lbs (2.72 kg)
	Total:	50 lbs (22.68 kg)	Total:	54.7 lbs (24.81 kg)

Standards Compliance & Certifications

Strikesorb modules are compliant to the following Surge Protective Device (SPD) standards:

UL 1449 4th Edition: 2011, IEC 61643-11: 2011, EN 61643-11: 2012, IEEE C62.11: 2005, IEEE C62.41: 2002, IEEE C62.45: 2002, NEMA-LS-1

Certification	UL, VDE, CE
Panel Board Certification	UL 60950 (Pending)

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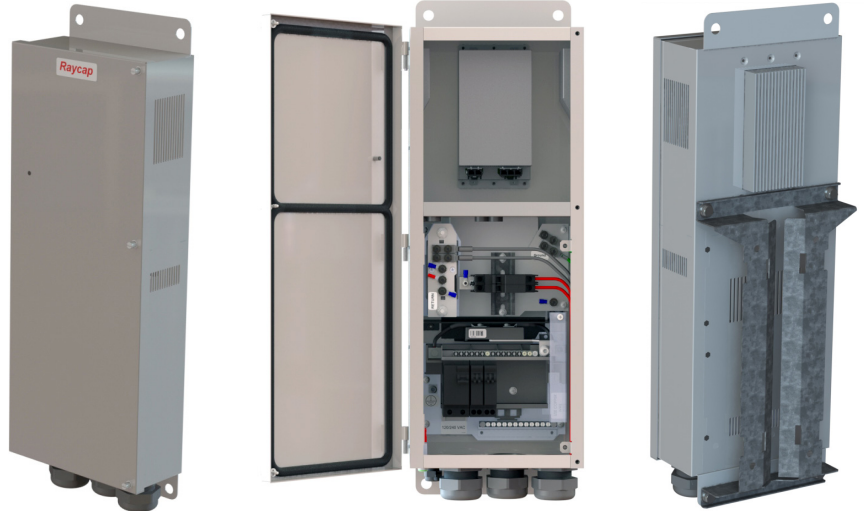


AC Disconnect with Integrated DC Power Supply for Small Cell Radio Heads

RUSAC-1440-P-240-1

The RUSAC-1440-P-240-1 is an AC/DC Disconnect which integrates a DC power supply, AC and DC load centers, and surge protection on both the AC and DC circuits. The compact design makes it ideal for today's small cell radio systems. It employs Strikesorb® surge protection, capable of withstanding direct lightning currents up to 5kA (10/350 μ s), and induced surge currents up to 60 kA (8/20 μ s). The RUSAC-1440-P-240-1 provides protection for up to ten AC circuits and two DC loads.

Strikesorb®



Mounting Bracket Included

Features

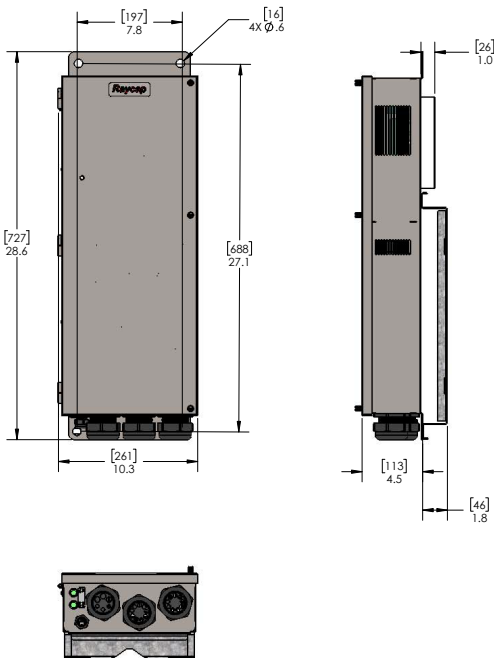
- 60A main breaker
- 120/240VAC split phase configuration
- Up to six duplex branch breakers providing (10) 120VAC circuits which can be bridged to provide 240V (two circuits rectified to DC power)
- Employs the Strikesorb 30 Series Surge Protective Device (SPD)
 - The Strikesorb 30 Series are Class I SPDs, certified by VDE per the IEC 61643-11 standard as suitable for installation in areas where induced lightning exposure is expected
 - Strikesorb 30 Series withstand direct surge currents up to 5kA (10/350 μ s) and induced surge currents of up to 60kA (8/20)
 - Provides low let-through / clamping voltage - as it does not employ spark gaps or other switching elements
 - Strikesorb offers unique protection levels for wireless and small cell applications
- DC power supply capable of providing up to 600 Watts @ -54VDC
- Passive Cooling
- Indicator LEDs for AC available (1) and DC available (2)
- 3x (M50) glands can be replaced with 1.5" conduit
- Unistrut or wall mounting holes
- Mounting bracket included for pole mounting options

Benefits

- Offers unique maintenance free protection
- Over current protection for up to ten AC circuits and two DC circuits (two AC circuits rectified to DC power)
- Utilizes a NEMA 3R rated enclosure, allowing for indoor or outdoor installation
- Lightweight design allows easy installation

Basic Applications

- Telecommunications



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SPECIFICATIONS

Strikesorb®

AC Disconnect with Integrated DC Power Supply
for Small Cell Radio Heads

RUSAC-1440-P-240-1

Electrical

Model Number	RUSAC-1440-P-240-1
Main Disconnect	60A main breaker
Number of AC Circuits	Available up to 10 (two circuits rectified)
AC Breakers	Up to (6) duplex
Breaker Interrupt Rating (KAIC)	10kA
DC Breakers	(2) 15 amp
Rated Power Output	600W
Rated Output Voltage	54 VDC \pm 0.5 VDC
Rated Output Current	11.2A
Output Over Current Protection	\geq 31.5A
Output Short Circuit Current Protected	Yes, long term with self-recovery
Input Under Voltage Protection	85 VAC \pm 5 VAC
Input Under Voltage Recovery	95 VAC \pm 5 VAC
Input Over Voltage Protection	332 VAC \pm 5 VAC
Input Over Voltage Recovery	320 VAC \pm 5 VAC
Power Factor	\geq 0.98 (load \geq 50%); \geq 0.99 (load \geq 100%)
Efficiency	@240 VAC: \geq 94%
Ripple Voltage	@20 MHz: \leq 100mVpp
Surge Protection Device (SPD) Type to UL	Strikesorb 30 Series
Surge Protective Device (SPD) Type per UL 1449 4th Edition	Type 2 component assembly
Surge Protection Device (SPD) Class to IEC 61643-11	Class I
Nominal Operating Voltage [U _n]	120V / 240VAC split phase
Nominal Discharge Current [I _n] per UL 1449 4th Edition	20kA 8/20 μ s
Maximum Discharge Current [I _{max}] per IEC 61643-11	60kA 8/20 μ s
Impulse Discharge Current [I _{imp}] per IEC 61643-11	5kA 10/350 μ s
Maximum Continuous Operating Voltage [U _c] (MCOV)	150V per line
Voltage Protection Level [U _p] per IEC 61643-11	700V
Suppression Technology	MOV

Mechanical

Connection Terminal (Power)	Compression Lug #6 - #14 AWG (13 - 2mm ²) Terminal Block #10-#26 AWG (6 - 0.14mm ²)
Environmental Ingress Protection (IP) Rating	NEMA 3R
Cooling Method	Passive
Operation Temperature (°C)	-40° C to +65° C
Storage Temperature (°C)	-70° C to +80° C
Enclosure Type (Outdoor)	Powder Coated Steel, NEMA 3R
Enclosure Dimension (L x W x H)	4.5" x 10.3" x 28.6" [113 x 261 x 727mm]
Weight	System: 35 lbs (15.88 kg) Mount: 5 lbs (2.26 kg) Total: 40 lbs (18.14 kg)

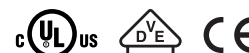
Standards Compliance & Certifications

Strikesorb modules are compliant to the following Surge Protective Device (SPD) standards:

UL 1449 4th Edition: 2011, IEC 61643-11: 2011, EN 61643-11: 2012, IEEE C62.11: 2005, IEEE C62.41: 2002, IEEE C62.45: 2002, NEMA-LS-1

Certification	UL, VDE, CE
Panel Board Certification	UL 67 (Pending)

AWG=American Wire Gauge



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2000W Rectifier Module for use in RUSAC-1AN2-P-240 Series Products

2kWRECTMOD

The 2kWRECTMOD is a hot-pluggable rectifier module that can easily be installed in any of Raycap's RUSAC-1AN2-P-240 Series AC/DC Disconnect products. It is designed to increase capacity from 2000W to 4000W for the DC power-system (37A to 74A @ -54VDC).



*2kWRECTMOD expands capacity
of the RUSAC-1AN2-P240-1
from 2kW to 4kW (@-53.5VDC)*

Features

- Provides 2000W capacity (37A @-53.5VDC) for output loads (with 176-290VAC input)
- $\geq 96\%$ Efficient @ 230VAC supply-voltage
- Operates from -40° to $+75^{\circ}\text{C}$ (-40° to 167°F)

Benefits

- Hot-swappable
- Durable 500,000 Hour (57.1 years) MTBF Construction (@ 25C)
- Reverse polarity protected

Basic Applications

- Telecommunications

SPECIFICATIONS

2000W Rectifier Module for use in RUSAC-1AN2-P-240 Series Products **2kWRECTMOD**

Electrical

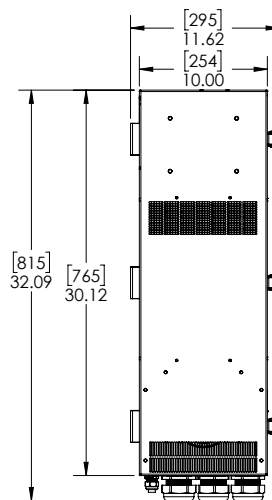
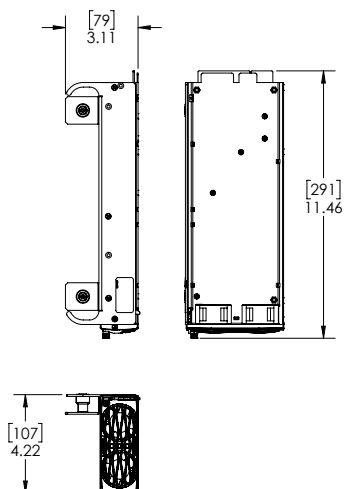
Model Number	2kWRECTMOD
Rated Power Output	(1) 2000W @ -53.5VDC, 2000W Total
Rated Output Voltage	53.5 VDC \pm 0.1 VDC
Rated Output Current (DC)	35 Amp
Output Short Circuit Current Protected	Yes, long term with self-recovery
Input Voltage	110/220VAC
Input Nominal Voltage	Full DC Power (176-280VAC); 42% Power (85-175VAC)
Input Current THD	<5% @ 50% 176 load; <8% @ 20% load
Rated Power Per Rectifier	1x 2000W (176-290VAC); 830W (85-175VAC)
Power Factor	\geq 0.99 @ 220VAC (20%-100% load)
Efficiency	@ 230 VAC: \geq 96%
Ripple Voltage	@ 200 mVp-p @ 25°C
Input Current THD	<5% @ 50% Load; <8% @ 20% Load
Leakage Current	<3.5mA @ 264VAC
Surge Current	Design Standard: EN/IEC61000-4-5
Reverse Polarity Protection	Triggered in case of incorrect input polarity
Maximum Capacitive Load	4000uF
Output Ripple and Noise	200mVp-p @ 25°C (53.5VDC)
Output Temperature Derating	100% Output (-40° to 50°C) Linear Derating (50° to 65°C) 80% Output (65°C) Linear Derating (65-75°C) 40% Output (75°C)

Mechanical

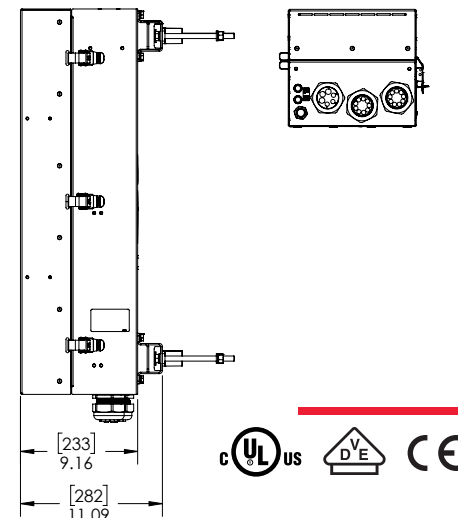
Operating Temperature (°C)	Full Output: -40° to 50°C (-40° to 122°F); Linear Derating (50° to 65°C)
Storage Temperature (°C)	-40° to 75°C (-40° to 167°F)
Dimensions	11.46" x 4.22" x 3.11"
Weight	4.7 lbs (2.13 kg)

Dimensional Drawings

Dimensional drawings of the
2kWRECTMOD



Dimensional drawings of the
RUSAC-1AN2-P-240 Series
enclosure products



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