



ULTRA COMPACT & ULTRA Series Rectifiers

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ULTRA COMPACT 48V series rectifiers - RUCS48/50 & RUCR48/30

The **ULTRA COMPACT 48V series** provides the highest power density, up to 3000W, with the highest efficiency, up to 96% across a wide load profile without the use of secondary software management. Two models are available, the 2000W RUCR48/30 and the 3000W RUCS48/50 which provides 56A of float voltage power. Both units accept universal input voltage up to 300Vac. The on-board digital controller and CAN bus operation provides the user with the network management tools needed in today's mission critical applications.



- 56A / 3000W at 53.5V float voltage
- >96% efficiency
- N+1 hot-swap operation
- -40°C to +75°C operating temperature
- CANbus / digital control
- supports HTTP & SNMP with optional controller
- remote adjustment of voltage and current
- single low noise fan cooling
- up to 41W per in³ power density

Specifications

Electrical

Input voltage 85-300Vac single phase
 Input frequency 45-66Hz
 Input current (max.) . . . 17A (RUCS48/50) / 12A (RUCR48/30)
 Input power factor >0.99
 Input THD <5% (meets EN61000-3-2)

Output voltage setting 53.5Vdc
 Output voltage adjustment 42-58Vdc
 Output current/power @ 53.5Vdc
 RUCS48/50 56A / 3000W - 175-300Vac Input
 23.4A / 1250W - 85-175Vac Input 1
 RUCR48/30 37.4A / 2000W - 176-300Vac Input
 15.7A / 840W - 85-176Vac Input 1

Protection

Input OVP >300Vac
 Input UVP <80Vac
 Output OVP (set by controller) 58.5 to 60.5Vdc
 Output short circuit indefinite
 Over temperature >75°C

Environmental

Operating temperature² -40°C to +75°C
 Storage temperature -40°C to +75°C
 Relative humidity 5 to 95% non-condensing
 Operating altitude^{3,4} 4,000m max.
 Cooling forced air (single fan)
 Acoustic noise <45db @ 25°C - RUCS48/50
 <45db - RUCR48/30
 MTBF >500,000 hours

Safety Certifications

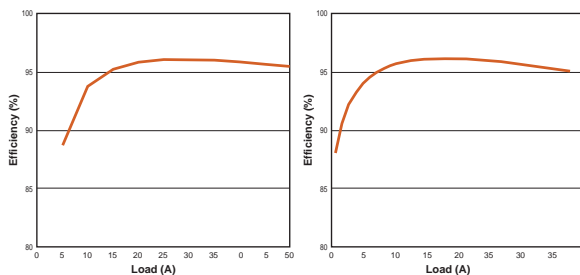
UL_{US} UL60950-1/CSA22.2 No. 60950-1
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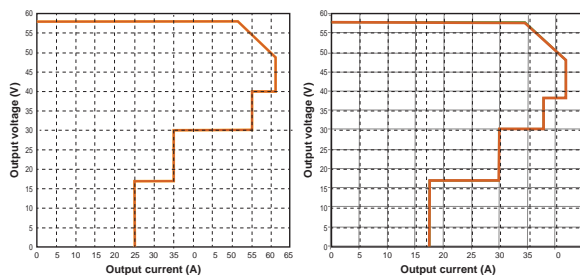
Emissions & immunity EN55022 class B, EN55024
 EN61000-3-3
 ETSI EN300 386, ETSI EN301 489
 ITU-T K.20
 Lightning Protection YD 5098-2005 5KA

Mechanical

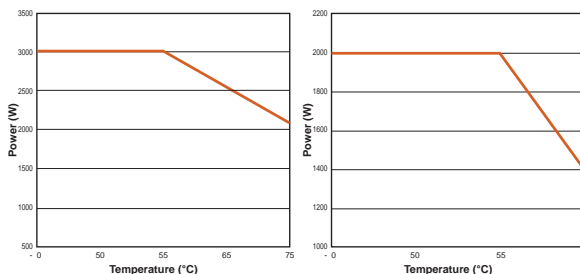
Dimensions, ins (mm) 1.6h x 4.1w x 11.1d
 (40.8 x 105.5 x 281)
 Weight <4.4 bs (2.0kg) - RUCS48/50
 <4.0lbs (1.8kg) - RUCR48/30



Efficiency



Output voltage vs. Output current



Power derating

Notes

1. derates linearly from 175 to 85 VAC
2. derates above 55°C ambient temperature
3. RUCS48/50 derates maximum operating temp. at 1°C/200m above 3000m
4. RUCR48/30 derates maximum operating temp. at 1°C/200m above 2000m

4-bay power shelf for ULTRA COMPACT 48V series rectifiers - TUCR1U4

TUCR1U4 is a 1RU high 19" rack-mount power shelf that houses up to four **ULTRA COMPACT 48V Series** rectifier modules giving a maximum output power capacity of 12,000 watts. Multiple shelves can be connected in parallel to increase overall system capacity as desired. Rectifiers are fully hot-swappable.



- holds up to four hot-swap rectifier modules
- 12,000 watts output power capacity
- CANbus / digital control
- Airflow from front to back
- individual AC input for each rectifier module
- single DC bus

Specifications

Electrical

Input voltage	85.300VAC single phase
Input frequency	47-63Hz
Input current	68A max.
Input power factor	>0.99
Input THD	<5% (meets EN61000-3-2)

Environmental

Operating temperature	-40°C to +75°C
Storage temperature	-40°C to +75°C
Relative humidity	5 to 95% non-condensing
Operating altitude ¹	4,000m max.
Cooling	forced air (using rectifier fans)
Acoustic noise	depends on installed rectifiers
MTBF	>500,000 hours

Safety Certifications

cULus	UL60950-1/CSA22.2 No. 60950-1
TUV, CB	IEC60950-1/EN60950-1

EMI

Emissions & immunity	EN55022 class B, EN55024 EN61000-3-3 ETSI EN300 386, ETSI EN301 489 ITU-T K.20
Lightning Protection	YD 5098-2005 5KA

Mechanical

Chassis Dimensions, ins (mm)	1.72h x 17.4w x 12.2d (43.6 x 442.0 x 308.7)
Mounting	1RU x 19"
Weight	<9.0lbs (4.1kg)

Notes

1. derates maximum operating temperature at 1°C/200m above 3000m

4-bay power shelf for ULTRA 48V series rectifiers - TUR1U4

TUR1U4 is a 1RU high 19" rack-mount power shelf that houses up to four **ULTRA 48V Series** rectifier modules giving a maximum output power capacity of 6,400 watts in an ETSI compatible form factor. The shelf can also accommodate a UDC48 controller in place of one rectifier module. Multiple shelves can be connected in parallel to increase overall system capacity as desired. Rectifiers and controller are fully hot-swappable.



- holds up to four hot-swap rectifier modules
- 6,400 watts output power capacity
- CANbus / digital control
- Airflow from front to back
- individual AC input for each rectifier module
- single DC bus

Specifications

Electrical

Input voltage	85.300VAC single phase
Input frequency	47-63Hz
Input current	52A max.
Input power factor	>0.99
Input THD	<5% (meets EN61000-3-2)

Environmental

Operating temperature	-40°C to +75°C
Storage temperature	-40°C to +75°C
Relative humidity	5 to 95% non-condensing
Operating altitude ¹	4,000m max.
Cooling	forced air (using rectifier fans)
Acoustic noise	depends on installed rectifiers
MTBF	>500,000 hours

Safety Certifications

cULus	UL60950-1/CSA22.2 No. 60950-1
TUV, CB	IEC60950-1/EN60950-1

EMI

Emissions & immunity	EN55022 class B, EN55024 EN61000-3-3 ETSI EN300 386, ETSI EN301 489 ITU-T K.20
Lightning Protection	YD 5098-2005 5KA

Mechanical

Chassis Dimensions, ins (mm)	1.72h x 17.4w x 10.3d (43.6 x 442.0 x 262.0)
Mounting	1RU x 19"
Weight	<9.0lbs (4.1kg)

Notes

1. derates maximum operating temperature at 1°C/200m above 3000m

ULTRA 48V series rectifiers - RUQ48/30 & RUL48/15

The **ULTRA 48V series** is designed for depth critical applications. The Ultra series provides up to 1600W in one of the shortest chassis on the market, 8.2" depth, and one of the highest efficiencies, up to 96% across a wide load range without the use of secondary software management. Two models are available, the 1600W RUQ48/30 and the 870W RUL48/15. Both units accept universal input voltage up to 300Vac. The on board digital controller and CAN bus operation provides the user with the network management tools needed in today's mission critical applications.



- 8.2" depth
- >96% efficiency
- N+1 hot-swap operation
- -40°C to +75°C operating temperature
- CANbus / digital control
- supports HTTP & SNMP with optional controller
- remote adjustment of voltage and current
- single low noise fan cooling
- up to 32W per in³ power density

Specifications

Electrical

Input voltage 85-300Vac single phase
 Input frequency 45-66Hz
 Input current (max.) 13A (RU48/30) / 6A (RU48/15)
 Input power factor >0.99
 Input THD <5% (meets EN61000-3-2)

Output voltage setting 53.5Vdc
 Output voltage adjustment 42-58Vdc
 Output current/power @ 53.5Vdc
 RUQ48/30 30.0A / 1600W - 175-300Vac Input
 15.0A / 800W - 85-175Vac Input¹
 RUL48/15 16.3A / 870W - 175-300Vac Input
 8.1A / 435W - 85-175Vac Input¹

Protection

Input OVP >300Vac
 Input UVP <80Vac
 Output OVP (set by controller) 58.5 to 60.5Vdc
 Output short circuit indefinite
 Over temperature >75°C

Environmental

Operating temperature² -40°C to +75°C
 Storage temperature -40°C to +75°C
 Relative humidity 5 to 95% non-condensing
 Operating altitude³ 4,000m max.
 Cooling forced air (single fan)
 Acoustic noise
 RUQ48/30 <38db @ 25°C, <55db @ 55°C
 RUL48/15 <30db @ 25°C, <48db @ 55°C
 MTBF >500,000 hours

Safety Certifications

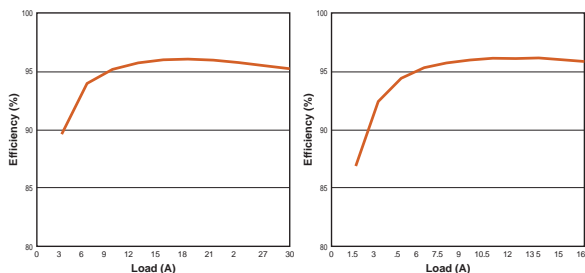
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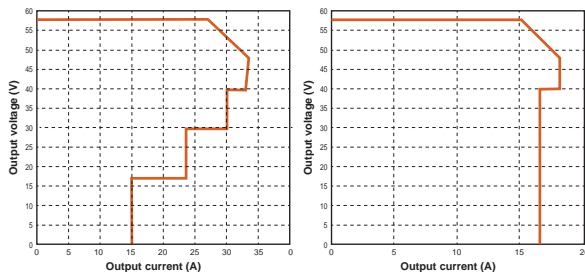
Emissions & immunity EN55022 class B, EN55024
 EN61000-3-3
 ETSI EN300 386, ETSI EN301 489
 ITU-T K.20
 Lightning Protection. YD 5098-2005 5KA

Mechanical

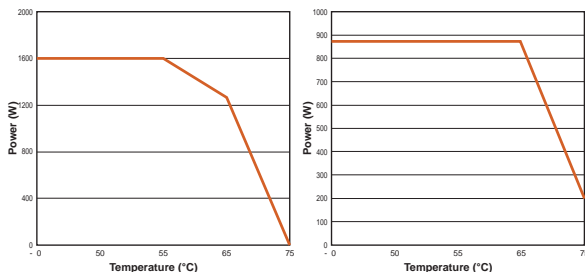
Dimensions, ins (mm) 1.6h x 3.8w x 8.2d
 (40.8 x 95.5 x 208)
 Weight <3.3lbs (1.5kg)



Efficiency



Output voltage vs. Output current



Power derating

Notes

1. derates linearly from 175 to 85 VAC
2. derates above 55°C ambient temperature
3. derates maximum operating temperature at 1°C/200m above 3000m

Controller & Site Monitoring Unit for ULTRA COMPACT 48V series & ULTRA 48V series - UDC48

UDC48 is a high-end power system controller and site monitoring unit. Comprehensive power system control and site monitoring are simply implemented through the front panel mounted LCD display and keyboard while serial and Ethernet communications ports provide both local and remote monitoring capability. UDC48 supports the monitoring management of power system based around UNIPOWER's ULTRA COMPACT 48V & ULTRA series rectifiers.



- comprehensive power management
- intelligent battery management
- energy management
- serial and Ethernet communications
- HTTP, SNMP & CAN protocols supported
- 8 dry contact alarms
- multiple plant inputs
- front panel setting of system parameters

Specifications

Environmental

Operating temperature	-40°C to +75°C
Storage temperature	-40°C to +75°C
Relative humidity	5 to 95% non-condensing
Operating altitude ¹	4,000m max.
Cooling	natural convection
Acoustic noise	none
MTBF	>500,000 hours

Mechanical

Dimensions, ins (mm)	1.61h x 3.9w x 7.65d (40.8 x 99.0 x 194.3)
Weight	<3.3 bs (1.5kg)

Notes

1. derates maximum operating temperature at 1°C/200m above 3000m

Main Functions

Battery Management

intelligent battery hibernation	controls batteries in manual & automatic modes
battery charging	battery tests
battery current limiting	battery temperature compensation
battery high temperature protection	multi-mode and multi-level disconnecting protection
battery imbalance detection	battery capacity calculation/backup time calculation

Detection

AC input voltage, current & frequency	DC output voltage
total load & battery currents	current of the nth battery (VRLA battery)
battery temperature	ambient temperature & humidity

Energy conservation management

intelligent rectifier hibernation	peak shifting power consumption
peak clipping power consumption	

Rectifier Managements

operation information	power-on/off control
output voltage & current limit	overvoltage protection
sequential startup	

Alarm Reporting

internal fault	AC phase failure
AC/DC overvoltage/undervoltage	load/battery fuse break
battery discharging	load low voltage disconnection (LLVD1, LLVD2)
battery low voltage disconnection (BLVD)	battery temperature high/very high/low/very low
rectifier failure	no response for rectifier

1RU shelf for UDC48 Controller & Site Monitoring Unit - UCS4800

UCS4800 is a 1RU x 19" rack-mount chassis that houses the UDC48 controller & site monitoring unit. Integrating directly with the ULTRA COMPACT 48V Series TUCR1U4 rectifier shelf as well as the TUR1U4 for the ULTRA 48V Series, UCS4800 provides user friendly connections for battery management, site status detection and alarm outputs.



- houses UDC48 controller & site monitor
- provides user friendly input/output interface
- supports HTTP, SNMP & CAN protocols
- directly integrates with ULTRA COMPACT & 48V ULTRA 48V rectifier shelves

Specifications

Environmental

Operating temperature	-40°C to +75°C
Storage temperature	-40°C to +75°C
Relative humidity	5 to 95% non-condensing
Operating altitude ¹	4,000m max.
Cooling	natural convection
Acoustic noise	none
MTBF	>500,000 hours

Safety Certifications

cUL _{us}	UL60950-1/CSA22.2 No. 60950-1
TUV, CB	IEC60950-1/EN60950-1

EMI

Emissions & immunity	EN55022 class B, EN55024 EN61000-3-3 ETSI EN300 386, ETSI EN301 489 ITU-T K.20
Lightning Protection	YD 5098-2005 5KA

Mechanical

Dimensions, ins (mm)	1.72h x 17.4w x 10.3d (43.6 x 442.0 x 262.0)
Mounting	1RU x 19"
Weight	<12lbs/5.6kg

Notes

1. derates maximum operating temperature at 1°C/200m above 3000m

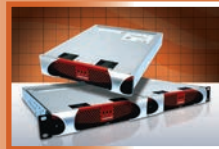
Power Solutions for Communications Applications

Today's critical communications systems demand Power Solutions that provide higher reliability, lower cost, advanced technology and greater flexibility in order to meet the rapidly evolving requirements of the marketplace. By achieving these needs through innovative products that can be configured to meet exacting electrical and environmental specifications, UNIPOWER has become a trusted partner to many of today's premier companies within the Communications Industry.

UNIPOWER's standard and customized AC and DC power solutions offer the user wide input voltage and operating temperature ranges to meet a variety of operating conditions. With power modules achieving Power Density >40 watts per cu. in. and Efficiency >96% we can provide scalable, turnkey solutions that offer the user outstanding Total Cost of Ownership through a reduced footprint and better thermal management.

Applications for UNIPOWER's products include wired and wireless configurations for:

- Network Equipment
- PBX/LAN/WAN
- Mobile Broadband
- Cellular sites
- Cable head-ends
- Base stations
- RF/Microwave
- Transmission Systems
- Land Mobile Radio
- Military Communications Systems
- Oil & Gas Communications Systems



Let UNIPOWER, configure, integrate and even install an end-to-end Power Solution for you.

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