

# SM1600

Compact switch mode rectifier  
with wide input and overvoltage protection  
for world-wide Telecom applications

Rating:  
30A at 48Vdc  
45A at 24Vdc



## Key Features:

- Space saving and extremely compact due to its exceptional power density and format (581W / I, 1U high)
- Robust due to its very wide operating input voltage range (80 to 300 Vac)
- Wide operating temperature range - 10°C to + 70 °C with full thermal management
- Reliable operation due to advanced self-protection (input, output, temperature, current, power) and high MTBF
- True galvanic disconnect on high and low mains voltage with automatic re-connection
- Self-protection against high temperature conditions via automatic output power de-rating
- Fan speed control & monitoring - low noise extended fan lifetime
- Fan monitoring with alarm signaling when failed. Easy fan removal for purposes maintenance
- Sine wave input (PFC) and high efficiency ( $\geq 91\%$ ) to reduce installation and operating costs
- Easy to operate: compact, light, hot pluggable, clear indications by LED, adjustment free, ready to use
- Control & alarm functions for remote management
- Float temperature compensation and output voltage control input for optimum battery charging via the system digital control module - increases battery life
- CE marked and UL registered



# >> SM1600

**For use with controllers  
& communication interfaces:**

ACM1D & NCS

**For use in systems:**

MTP1600C, MPS1600C

## SPECIFICATION

**Compact switch mode rectifier with wide input and overvoltage protection for world-wide Telecom applications**

### INPUT

Nominal input voltage lines	208, 220, 230, 240Vac without adjustment
Input voltage range	185 - 300Vac , (output power according features below) 80 - 185Vac (with output power de-rating between 80 and 185Vac)
Nominal current	7.3A at 230Vac
Nominal frequency	50/60Hz
Number of phases	Single phase
Power factor	0.99
Total harmonic distortion (THD)	<5%
Inrush current	<20A

### OUTPUT

Nominal voltage	48Vdc
Output voltage control range	42-58Vdc
Maximum power	at 230Vac -10%, + 20% - 1600W up to Tamb = 30°C -1500W up to + 45°C - 1400W up to + 50°C at 230Vac ±20% - 1500W up to + 40°C - 1400W up to + 45°C
Nominal current	30A
Maximum current	42-58Vdc
Maximum power	31.5A
Current sharing	±5%
Nominal current	30A
Efficiency	91%
Line & load regulation	<1%
Ripple and noise	<2 mV rms psophometric weighted, <20 mV rms unweighted, <250 mV peak to peak (30 MHz Bandwidth)
Transient response	5% for load variations from 10% to 90% or 90% to 10%, recovery to normal regulation limits in 5ms

# SPECIFICATION

PROTECTION	
Input protection	Hot pluggable, inrush current limitation, soft-start, fuse on phase and neutral, VDR surge protection devices. Auto galvanic disconnect and stop above 300Vac with automatic re-start at 280Vac Auto galvanic disconnect and stop under 80Vac with automatic re-start at 90Vac
Output protection	Hot pluggable, electronic short circuit protection, output power limit, reverse polarity protection
Output overvoltage protection	Selective DC overvoltage shutdown
Thermal protection	Automatic power de-rating on high temperature

ALARMS AND INDICATORS	
Alarms	Mains fail, rectifier fail, control loop fail / rectifier in fall back operation, DC overvoltage shutdown, output voltage present, fan fail
Front panel indicators	Green LED: DC output "OK" Red LED: mains fail, rectifier fail, fan fail

MECHANICAL SPECIFICATION	
Dimensions	43.6mm H (1 U), 210mm W, 298mm D (minimum cabinet depth: 400mm)
Weight	2.9kg
Ingress protection	IP20
Mounting	Horizontal 1 U, 2 rectifiers across 19" or ETSI rack
Connections	Hot pluggable with rear connections

ENVIRONMENTAL	
Cooling	Forced air cooling with electronic speed control
Operating temperature	- 10°C to + 70°C full power up to 45°C, apply de-rating criteria between + 45°C and +70°C
Storage temperature	- 40°C to + 85°C
Humidity	10% to 95% RH non-condensing
Acoustic noise	< 50dB(A)

STANDARDS	
Safety	EN60950-1
EMC	Emission: EN55022 Class B - EN61000-3.2/3.3 - EN61000-6.3/6.4 Immunity: EN61000-6.1/6.2 - ANSI C62.41
Telecom networks	EN300 386 - EN300 132-2
Environment	EN300 019 (Transportation, storage and operation)
Acoustic noise	ETS 300753
Approvals	CE, UL

AVAILABLE CONFIGURATION	
Product reference	in 48Vdc version SM1600-48-30 Also available in version with fuse on the DC output, negative polarity in 24Vdc version SM1600-24-45



# Power Systems

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