Specification

Rev. 1.2

500W Telecommunication 19“- Module

Table of Contents:

1 General

Wide AC input range (100V – 240V)
High efficiency, typically >90%
High reliability
Chassis 19'' compatible
Designed for free convection
Hot plug capability
SELV outputs
Safety according EN 60 950
Power factor correction and harmonics according EN 61 000-3-2
Immunity and disturbances according VDE 160 and EN 61 000-4-2,-3,-4.-5,-6

2 Electrical Data

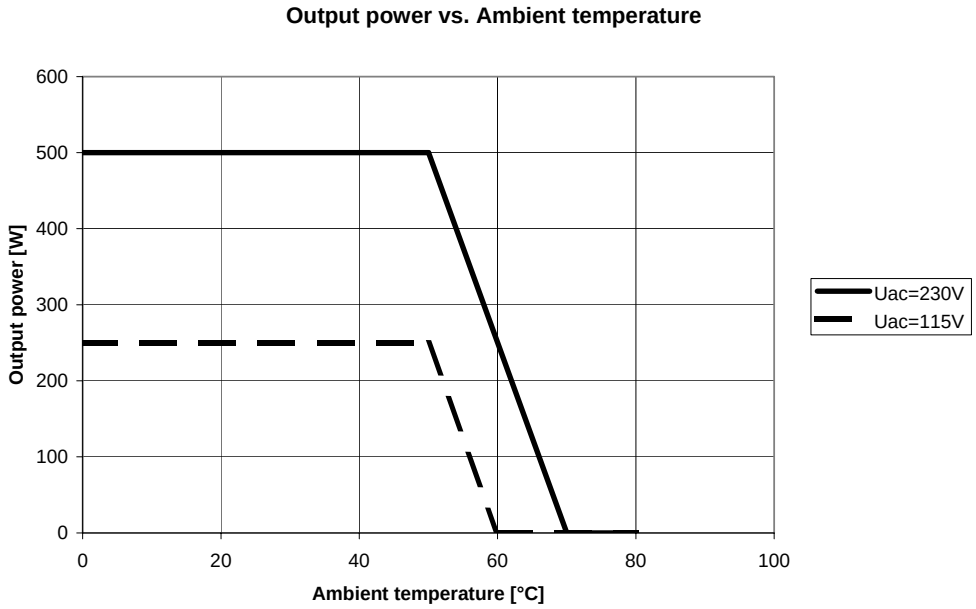
2.1 AC-Input

Nominal input voltage range	100 VAC – 240 VAC
Min. / max. input voltage range	90 VAC – 264 VAC
Line frequency	47Hz – 63Hz
Powerfactor correction	According EN 61000-3-2
Harmonic distortion	According EN 61000-3-2
Efficiency (full load; @ 230V)	> 0.9
Input current limitation (Vin: 264VAC)	< 15A peak cold / < 30A peak warm
Hold up time	15 ms
Fuse	6.3 AT / 250V F (5x20mm)

2.2 DC Output Characteristics

Max. output power	500W @ 230V / 250W @ 115V Temperature derating *see diagram 1*
Output voltage range	50.5 VDC – 56.5 VDC
Output voltage noise	< 200mVpp (bandwidth 20MHz)
Static load regulation	<1%
Static line regulation	<1%
Dynamic load regulation	<5%
Maximum loadstep	10% - 90%
Maximum current slew rate	0.5 A/µs
Dynamic regulation time	<2 ms (10%-90%)
Temperature coefficient	0.02% / K
Output current 230V range	8.9ADC – 9.9ADC
Output current 115V range	5.3ADC – 5.9ADC
Output current limitation 230V range	10.0ADC - 11.5ADC
Output current limitation 115V range	6.0ADC – 6.8ADC
Output power limitation 230V range	570W typ
Output power limitation 115V range	370W typ
Output current characteristic	I – U *see diagram 2*

diagram 1



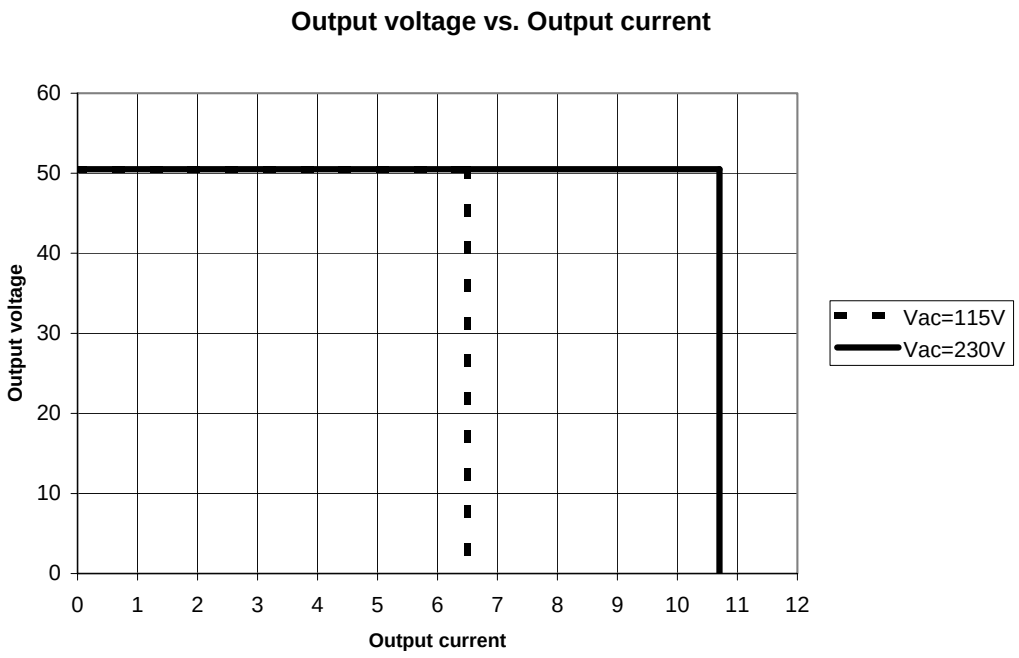


diagram 2

3 Protection Circuits

In the case of over temperature or AC fail the PSU will restart automatically
The PSU is overload and continuous short circuit protected!
In the case of output overvoltage the PSU will latch off. There is no automatic restart.
It can only be restarted by cycling the AC supply.

4 Signals

4.1 Inhibit [Ucr]

Description:
Input signal on/off and Vout setting

Inhibit voltage [Ucr]	**Condition**	**min.**	**typ.**	**max.**
Input voltage range	Between Ucr and Vout-	- 0.7V		60V
PSU off	function not available			
PSU in regulation	Voltage source applied	5.0V	5.3V	5.5V
PSU out off regulation	Voltage source applied	13.5V	13.9V	14.3V
Switch on delay time	Time Ucr on to SYS_OUT low		60ms	
Switch off delay time	Time Ucr off to SYS_OUT high		1.5ms	

Note: If the PSU is out of regulation then U_{out}=42.8+/-0.5V DC.

4.2 System Good [SYS out]

Description:
Open collector output signal

Systemgood [SYS out]	**Condition**	**min.**	**typ.**	**max.**
Output voltage range	Between SYS_OUT and Vout-	-0.7V		60V
Sink current	Between SYS_OUT and Vout-			50mA
System good level	Vout+ >	38.7V	40.0V	41.3V
Vdrop @ Iin=50mA	Between SYS_OUT and Vout-			0.2V
Rise time			1us	
Fall time			1us	

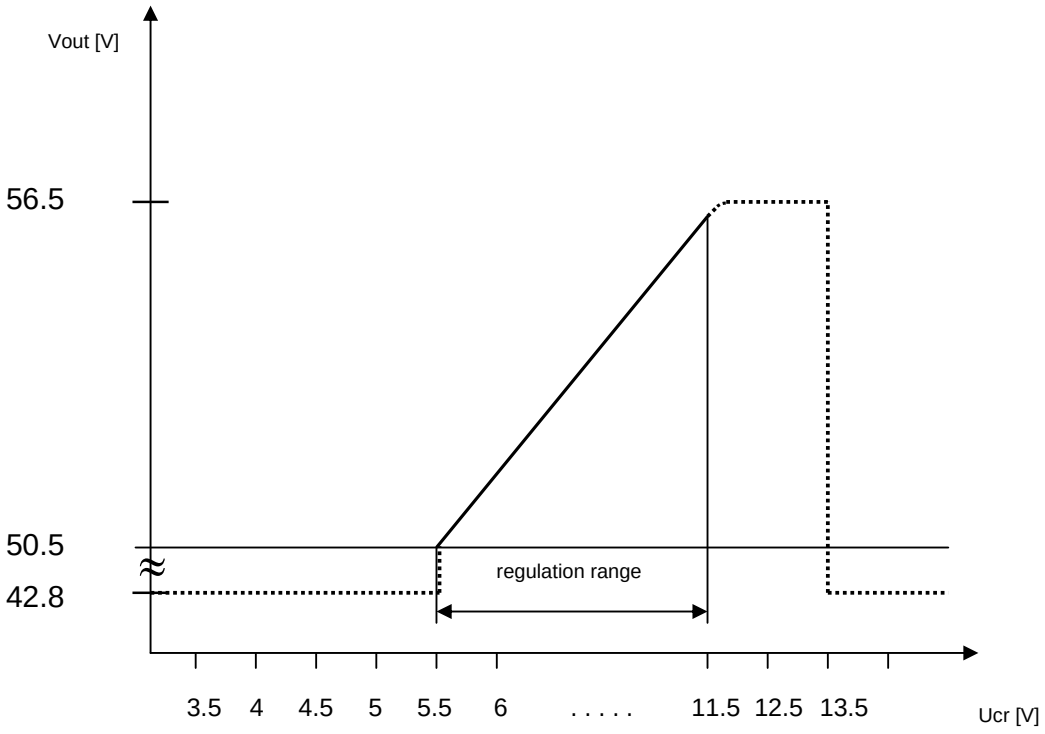
The system good signal will get high when at least one of the following conditions is true:

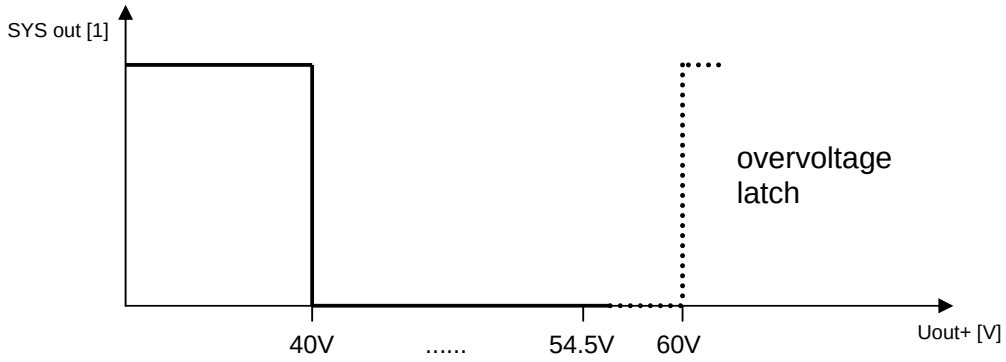
- output voltage is below the system good level (see *4.3 Signal Diagram*)
- AC lines are disconnected for longer than the hold up time
- a system overvoltage (>59V) latches the unit

4.3 Signal Diagram

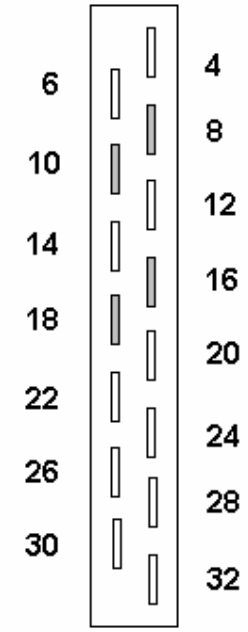
Description:

Vout vs. Ucr and SYS Out vs. U_{out}





5 Connector Pinning



DIN 41 612 H 15

PIN	Description	Name
4	Phase	P
6	Neutral	N
8[1]	Protection Earth	PE
10[1]	Protection Earth	PE
12	Output voltage positive	Vo+
14	Output voltage positive	Vo+
16[1]	Positive hot plug	HC+
18[1]	Negative hot plug	HC-
20	Output voltage negative	Vo-
22	Output voltage negative	Vo-
24	n.c.	
26	System good	Sys Out
28	Inhibit / set up input	i/Ucr
30	n.c.	
32	n.c.	

[1] Leading pin

6 Mechanical Data

6.1 Housing

width: 156 mm
height: 117 mm
depth: 173 mm
weight: 2.5 kg

6.2 Finish

tbd

6.3 Label

tbd

6.4 Package

tbd

7 Environment Conditions

7.1 Electrical

protection class	**standard**	**comment**
Safety requirements:	EN60950+ZB/ZC +EMKO UL 1950 CSA 22.2 No. 950	
Leakage current (input voltage 264V/60Hz)	EN60950	<3.5mA
Conducted EMI	EN55022/B	0.15MHz-30MHz
Radiated EMI	EN55022/B	30MHZ-1000MHz
Immunity	EN50081/1	
ESD	EN61000-4-2	8kV contact discharge 15kV air discharge
Radiated field strength	EN61000-4-3	10V/m (class2)
Fast transients	EN61000-4-4	4kV AC input lines (class3)
Surge voltage	EN61000-4-5	4kV common mode (class3) 2kV differential mode (class3)
MTBF @ +25°C ambient temperature	MIL HDBK 217 F	>20 years

7.2 Mechanical

protection class	**standard**	**comment**
Operating temperature @ nominal load		0°C..+50C
Storage temperature		-25°C..+85°C
Atmospheric humidity		max. 90% (no condensation allowed)
Ventilation		free convection
protection class		class I
Height		< 1000m altitude
Joggle	VDE 0160 5.88	
Noise	EN27779	
Climatic for system	IEC721-3-3 (class 3K2)	
Mechanical enviroment	IEC721-3-3 (class 3M2)	
Shock test	EN 60068-2-27	
Bump test	EN 60068-2-29	
Vibration	EN 60068-2-6	
Random Vibrations	EN 60068-2-35	

8 Dimensions