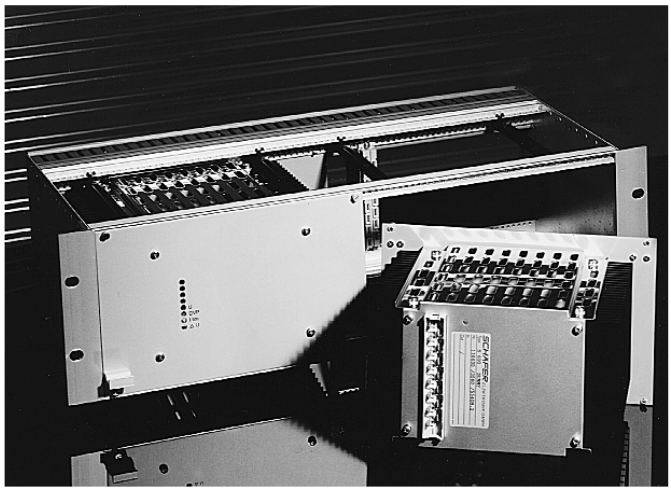
Rack & Cabinet Mount Switchers

50-22 kWatts
C Series

THE XPERTS IN POWER



- CE Marked LVD & EMC
- One to Four Outputs
- 5-400 Volts Output
- Eurocassette or Wall Mount
- Parallel Redundant Operation
- Fully Wired Customised Racks
- Power Factor Correction Modules

Specification

Input

DC Input Voltage	•	*See Table*
Input Voltage	•	*See Table*
Input Frequency	•	*47-440 Hz*
No-Load Input Current	•	*3% of full load current typical*
Inrush Current	•	*AC/DC limited by thermistor DC/DC dependson impedance of supply line, see list of options for option 'I'*

Output

DC Output Voltages	•	*See Table*
Switch-On Time	•	*100 ms typical C/M200-C4700, 500ms typical C5600-C5800*
Hold-Up Time	•	*AC/DC Increases with input voltage 15 ms typical at 230 VAC DC/DC depends on input voltage (typ. 2 ms at 12 VDC)*
Line Regulation	•	*0.1% (±10% change Vin)*
Load Regulation	•	*0.2% (10-90% load)*
Ripple & Noise	•	*≤1% +30 mV p-p (0.5% typical lin. regulator auxiliary)*
Load Transient (20-100-20%)	•	*6% typical*
Response Time to ±1%	•	*2 ms typical C/M2000-C4700, 10 ms typical C5600-C5800*
Overload Protection	•	*Current limited at 105-110% of full load*
Overvoltage Protection	•	*Standard on single output models & main output on multi output units*
Remote Sensing	•	*Standard for main output*
Temperature Coefficient	•	*0.02%/°C typical*

General

Remote Sensing	•	*Standard for main output*
Switching Frequency	•	*Approx. 33 KHz*
Efficiency at Full Load	•	*60-95%, depending on model*
MTBF	•	*AC/DC approx. 250,000 hrs at +25°C DC/DC approx 100,000 hrs ar 40 °C*
Connector	•	*H 15 DIN 41612 or studs for higher current outputs C/M200/C4700, studs only for C5600-C5800*

Environmental

Temperature Coefficient	•	*0.02%/°C typical*
Operating Temperature	•	*-20°C to +75°C, derate from +55°C at 2.5%/°C (Optional -40 °C to +75 °C)*
Storage Temperature	•	*-40 °C to +85 °C*
Relative Humidity	•	*5-95% non-condensing*

EMC & Safety

Isolation	•	*Acc. to EN60950 Class 1*
RFI-Interference	•	*Acc. to VDE 0878, EN 55022, Level A*
Construction (Safety)	•	*Acc. to EN60950 Class 1*
Creepage Distance	•	*Acc. to VDE 0110, 4 mm*
Air Distance	•	*Acc. to VDE 0110, 3 mm*
Earth Leakage	•	*<3.5 mA at 230 VAC, to EN60950*
High-Energy Pulses/Surges	•	*ENV 50142 (Level 3)*
Spike/Bursts	•	*Acc. to IEC 1000-4-4 (Level 3)*

For Full Module Data - See AC-DC & DC-DC Series Datasheets at www.xpplc.com

OPTIONS C

	Options	Designation	C200	M200	C300	M300	C500	M500	S600	SM600	C600	M600	C1200	M1200	C1300	M1300	C1500	C1600	C2500	C2600	M2600	C3500	C3600	C3700	C3800	C4700	C5600/C5700/C5800
Mech	Tropical protection	T	Options are available in combination with other options																								
	Extended temp. range	C																									
	Increased mech. strength	MS																									
	Wall mounting	W																									
Input	Inrush current limiting[1]	I	•	•	•	•	*	*	*	*	*	*	•	•	*	*	*	*	*	*	*	*	*	*	*	•	*
	Series diode	SD	•	•	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Anti-parallel diode	AD	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Autoranging	AU	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Output	Decoupling diode	DD	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Active current sharing	CS					*	*	*	*	*	*	*	*	*	*	•	•	•	•	•	•	•	•	•	•	•
	Inhibit (to be specified)	H	*	*	*	*	*	*	*	*	*	*	*	*	*	*	•	•	•	•	•	•	•	•	•	•	•
	Externally programmable	E	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Signals	Power fail	P	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	*	•	•	•	•	•	•	•	•
	DC-OK one output	D	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	*	•	•	•	•	•	•	•	•
	DC-OK all outputs	M								•		•		•		•					•						
	AC-OK (Inverters)	AC																									
	Signals with relay	R	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	•	•

Notes

1. *Standard for mains input model to series C3700.*
- *Option is available in combination with other options.*
* *Option is available with certain restrictions, contact technical sales for details.*

OPTIONS C

Option T (Tropical protection):
The unit is given additional protection by a heavy coat of varnish on the printed circuit board(s) and components.

Option C (Extended temperature range):
Units are designed & tested for operation at an ambient temp down to -40 ºC.

Option MS (Increased mechanical strength):
Screws are fastened by Locktite and heavy components are fastened by ties or glue to following specification. Vibration: 2 – 2000 Hz at 2 G, Shock: 10 G for 11 ms to DIN 40046 part 7.

Option W (Wall mounting):
Module is screwed to a mounting plate for installation within a cabinet (See C Series in DC-DC Section).

Option I (Inrush current limiting):
A thermistor is connected in series with the input lines which changes its resistance from high to low when it gets hot. It does not reduce the current surge if the input power is interrupted for a short period of time not allowing the thermistor to cool down. Electronic inrush current limiting device is available upon request.

Option SD (Series diode):
To protect the module against input voltage of wrong polarity, a series diode is provided (efficiency reduces).

Option AD (Anti-parallel diode):
To avoid the power losses of a series diode a diode is provided with opposite polarity in parallel to the input blowing an internal or external fuse if the module is connected to a supply with wrong polarity.

Option DD (Decoupling diode):
For redundant operation the outputs of two or more units are paralleled behind de-coupling diodes so that an internal fault of one module does not affect the operation of the others. These diodes cause power losses. For high currents the de-coupling diode may have to be installed externally.

Option SD, AD & DD:
May need to be fitted externally - contact sales office.

Option AU (Auto-ranging):
In standard dual AC input units (115/230 VAC) the range is selected by connecting the input line to different pins on the connector. With auto-ranging the unit senses the input voltage and automatically provides the correct connection.

Option CS (Active current sharing):
By means of an additional control circuit active current sharing is provided via an interconnecting wire between 2 or more units.

Option H (Inhibit):
Operation of the unit is inhibited if a voltage signal (5 V/10 mA) is applied in reference to the negative line of the (main) output. Alternatively, a connector pin connected to the negative input line also shuts off the converter (to be specified). This can also be used in conjunction with a thermal trip which shuts unit down.

Option E (Programmable by ext. signal):
An ext. signal applied with reference to the negative output line programs the output voltage.

Option P (Power fail):
A signal (logic or relay) is given if the input voltage drops below the specified limit. In AC input units we sense the rectified input voltage so that a power fail alarm can be avoided if at light load mains power returns before the input capacitors are substantially discharged.

Option D (DC-OK, one output):
A signal (logic or relay) is given if the voltage of the main output is below the specified limit. In multi-output systems the main output is monitored.

Option M (DC-OK, all outputs):
In multi-output systems a signal is provided if the voltage of any output is below the specified limit.

Option AC (AC-OK)

A logic signal is given if the output voltage of an inverter is below the specified limit.

Option R (Relay):
Options **P, D** and **M** are available in conjunction with option **R**. A relay is provided for indication instead of a logic signal with a N.O., N.C. or changeover contact (to be specified).

Option 'Y' (Sys-reset):
This logic signal is a combination of power fail and DC-OK as specified for VME systems.

Input & Output Voltages

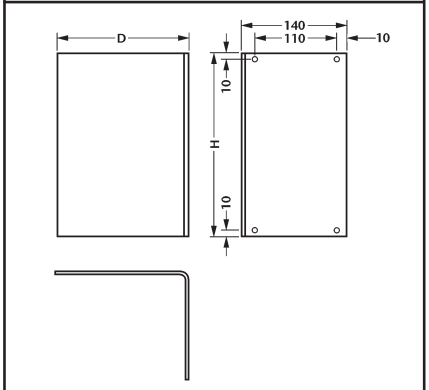
AC Input Voltages	DC Input Voltages	DC Output Voltages
115 VAC (93-138 V) 230 VAC (185-264 V) 3 x 400 VAC (320-460 V) 3 x 480 VAC (400-530 V)	10-16 VDC 18-36 VDC 36-75 VDC 45-90 VDC 80-160 VDC 160-320 VDC 320-640 VDC 450-900 VDC	4.5-5.5 VDC 8-10 VDC 11-13 VDC 14-16 VDC 23-26 VDC 26-30 VDC 45-55 VDC 58-68 VDC 100-130 VDC 190-200 VDC

STANDARD MODULES - OUTPUT POWERS & DIMENSIONS C

Series	Single Output Maximum Power	Multi Output Maximum Power	Dimensions		
			Width	Depth	Height
200	50 W	40 W	10 TE	160 mm	3U
300	150 W	80 W	14 TE		
500	250 W	180 W	21 TE		
600	350 W	300 W	42 TE		
	500 W	450 W	42 TE		
2500	400 W	-	21 TE	220 mm	3U
2600	800 W	700 W	42 TE		
1200	200 W	160 W	10 TE	160 mm	6U
1300	400 W	320 W	14 TE		
1500	600 W	-	21 TE		
1600	1200 W	-	42 TE		
3500	850 W	-	21 TE	220 mm	6U
3700	1250 W	-	28 TE		
3600	1700 W	-	42 TE		
3800	2500 W	-	56 TE		
4700	2500 W	-	28 TE	300 mm	6U
5600	6000 W	-	19”	360/460 mm	6/9U
5700	8000 W	-	19”		
5800	12000 W	-	19”		
6400	22000 W	-	19”	600 mm	8 U

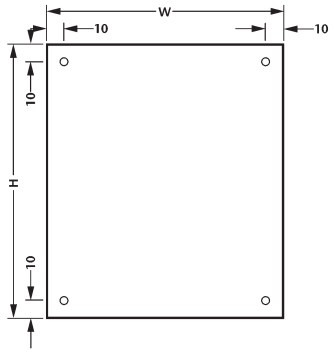
Wall Mounting Options

Angles



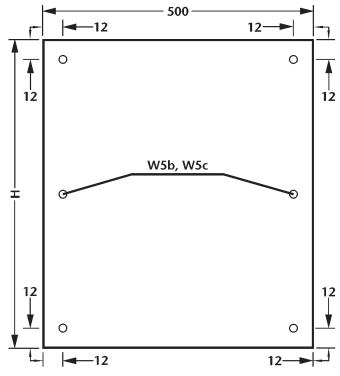
Option	Series	Width	Height	Depth
W1	300	140 mm	220 mm	180 mm
	500			
W1a	1300[1]	140 mm	300 mm	260 mm
	1500[1]			
	3500[1]			
	3700[1]			
W1b	1200	140 mm	360 mm	260 mm
	1300			
	1500			
	3500			
	3700			
W1c	4700	140 mm	360 mm	340 mm

Plates



Option	Series	Width	Height	Depth
W2	600	220 mm	220 mm	-
	2600			
W3	3600	220 mm	360 mm	-
W4	3800	280 mm	360 mm	-
	4800			

Plates



Option	Series	Width	Height	Depth
W5a	5000	500 mm	400 mm	-
W5b		500 mm	600 mm	-
W5c		500 mm	800 mm	-

NOTES
1. No space available for connector underneath module.
2. The size of the module plate depends on model size and output power, and on any additional equipment to be included - Contact Technical Sales.

C Series Versatility

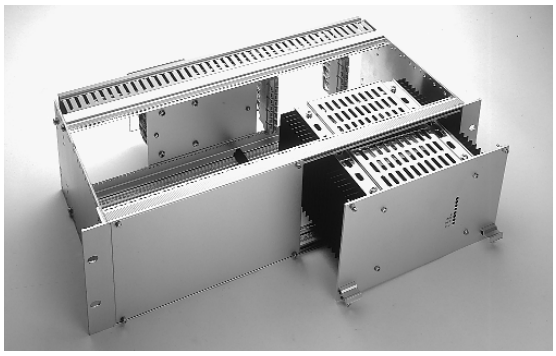
With over 3000 standard modules and many more modified and custom built units available, the C Series of AC-DC and DC-DC Converters can be used in a wide variety of applications and environments.

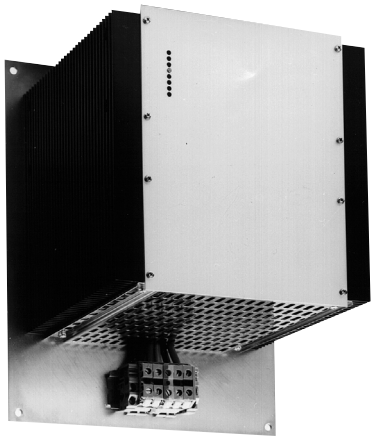
Standard Modules

Standard modules are supplied in either Euro-Cassette or 19” rack mount formats depending on power rating.

Sub-Racks

Fully wired sub-racks can be configured as 3U, 6U or 9U allowing any mix of units - including ‘hot swap redundant systems complete with alarms, monitoring and controls.





Wall Plates

For customers looking to install units in their own cabinets the C Series can be supplied to a wall plate (W option).
Units come fitted to a vertical mounting plate complete with screw terminals.

Customer Specific

In addition to the ‘W’ option, units can be configured into complete stand-alone systems. The picture opposite shows a switchmode battery charger specifically designed for installation into a lighthouse.
It has been mounted in a stainless steel cabinet to withstand a salt water environment.