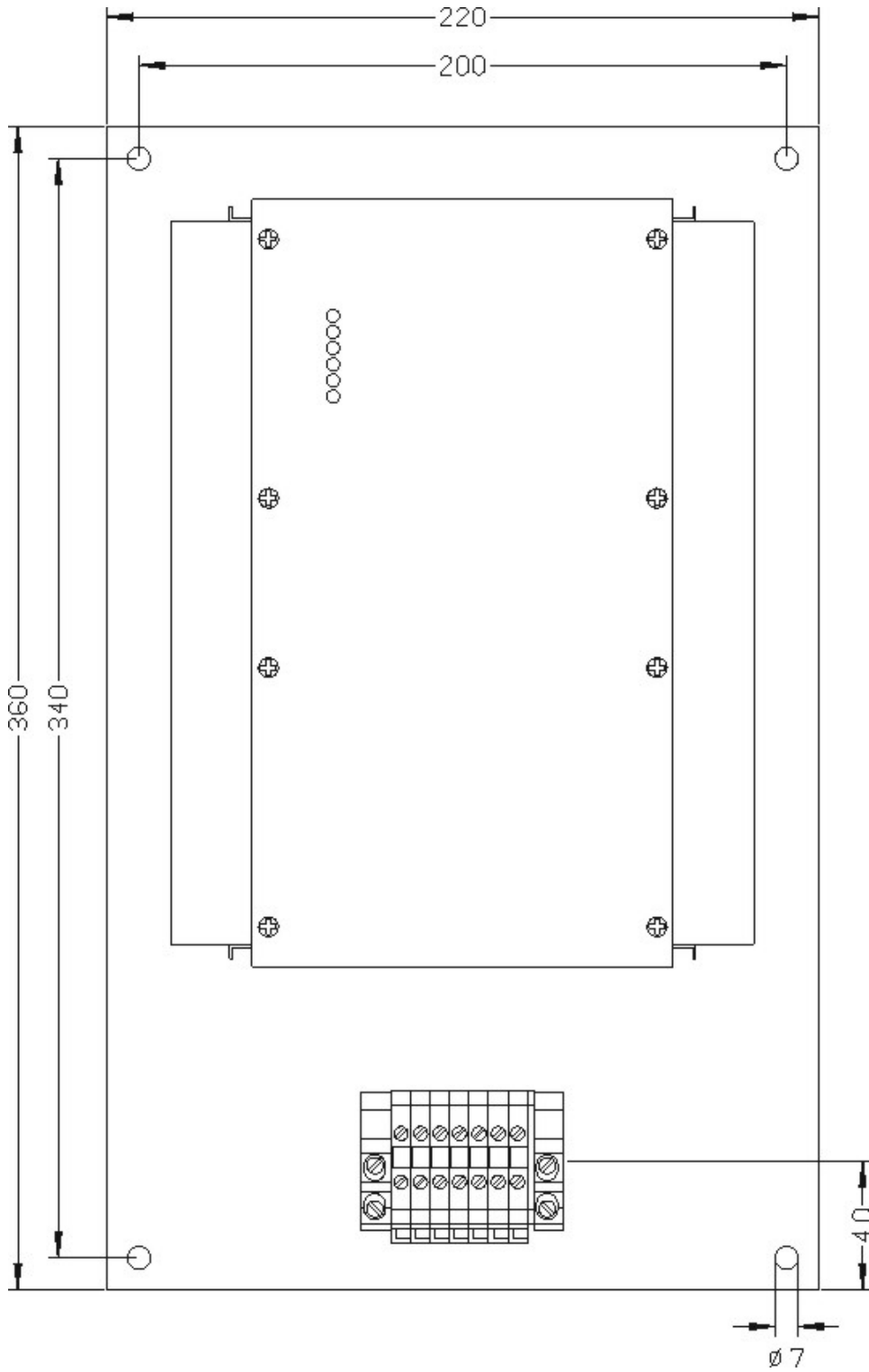


Input	Nominal voltage	200 / 230 VAC
	Voltage range	(185 - 264) V AC, 50/60 Hz
	input frequency	47-63 Hz
	no load input power	10 W
	input protection	with external fuse ( rating 16A )
	input fuse	16 A
	hold-up time	approx. 20 ms
	inrush current	limited via thermistor A
	bursts	acc. to EN 61000-4-4 (level 3)
	High energy pulses (surge)	acc. to EN 61000-4-5 (level 3)
Output	Nominal voltage	110 VDC
	max. current output 1	14.00 A
	Power	1820.0 Watt
	turn on rise time	2ms typ.
	response time	2ms typ.
	Efficiency	90 %
	control	IU characteristic
	line regulation ( $\pm 10\%$ )	0.1%
	load regulation (10-90%)	0.2%
	load transient (10-90-10%)	6% typical
	ripple	approx. 100mVpp
	short circuit protected	standard
	overload protection	current limited to 105 - 110% of full Io
	overvoltage protection	OVP switches off module with automatic return to operation
remote sensing	standard	
redundant operation	yes, with decoupling diodes (option 'dd')	
parallel operation	yes, current balancing by decoupling diodes or option 'cs'	
General	temperature coefficient	0.02% / °C typical
	operating temperature	-20°C to +75°C (optional: -40°C to +75°C)
	load derating	2.5% / °C from +55°C
	storage temperature	-40°C to +85°C
	cooling	natural convection
	switching frequency	approx. 33 kHz
	isolation resistance	> 10M Ohm at 500 VDC
	isolation (input - ground)	3500.0 VDC
	isolation (output - ground)	2100.0 VDC
	isolation (input - output)	3500.0 VDC
	isolation voltage	acc. to EN 60950, class 1 (SELV ask factory)
	safety	acc. to EN 60950, class 1
	crepage distance	acc. to VDE 0110, $\geq 4$ mm
	air distance	acc. to VDE 0110, $\geq 3$ mm
	earth leakage	< 3.5mA at 230 VAC, acc. to EN 60950
	EMC emission	acc. to EN 55022 class A, optionally class B
	EMC immunity	acc. to EN 55022 class A, optionally class B
	dimensions	[H x W x D], 360 x 220 x 230 mm, (14,17 x 8,66 x 9,06 inch)
	weight	12 kg/ 26,5 lb
	CE marking	yes
MTBF	approx. 100000h	
connector	terminal bloc	



## General Description

AC / DC-converter

Full-bridge, AC-input, Single output

### 1) Primary Circuit

The input is connected to the primary switching system via RFI filter 2 and bridge-connected rectifier 3. The filter reduces switching noise that is conducted into the primary supply system. The switching system is a push-pull circuit in full-bridge connection. Switching transistors 6a, 6b, 6c and 6d are controlled by circuit 8 alternately conducting with variable pulse-width, connecting the rectified input voltage with alternating polarity to the primary winding of transformer 5. The signal across shunt 7 is used for current limiting for the protection of the semiconductors against excessive current.

### 2) Secondary Circuit

The voltage of the primary winding is transformed to the secondary side in the turns ratio of the windings, is then rectified by diodes 11a, 11b, 11c and 11d and filtered by choke 12 in conjunction with capacitor 14. The average value of the voltage across the capacitor depends on the input voltage and the on/off-ratio of the switching transistors. It is conducted to the output terminals via ripple filter 16. The output voltage is connected via external sense leads to control circuit 18. There it is compared with a reference, and the error signal controls via an opto-coupler the switching transistors at the primary side.

For overvoltage protection (OVP) circuit 17 senses internally the output voltage and turns off the switching transistors via an opto-coupler if a certain adjustable level is reached. The circuit automatically returns to normal operation with a delay of approximately 0,5 s but continues to inhibit operation if the voltage limit is exceeded again after every new start.

For current limiting the signal across shunt 13 starts to reduce the output voltage if the current exceeds a certain limit (normally 1.1-times the rated value). For the reason of dynamic stability this circuit responds with some delay whereas the primary limiting circuit interferes nearly instantaneously for fast protection of the semiconductors.

