

PC Series

190...230 Watt AC-DC Converters



Converter with single stage AC to DC conversion and PFC
No electrical isolation input to output
Input voltage range 85(95)...255 V AC



- Extremely slim case (4TE), fully enclosed
- Single outputs for 72 and 85 V DC loads
- Ideal to supply isolated P series DC-DC converters
- Operating ambient temperature range -40...71 °C with convection cooling

Selection chart

Output 1		Input voltage	Rated power	Efficiency	Type	Options
$U_{o \text{ nom}}$ [V DC]	$I_{o \text{ nom}}$ [A]	U_i [V AC]	$P_{o \text{ max}}$ [W]	η [%]		
72	2.7	85...255	190	94	LPC 1901-7D	-9
85	2.7	95...255	230	94	LPC 1902-7D	-9

Input

Input voltage	continuous range	85(95)...255 V AC
Input frequency		47...63 Hz
Inrush current	extremely low input capacitance of 1.25 μ F	negligible

Output

Efficiency	$U_{i \text{ nom}}, I_{o \text{ nom}}$	94%
Output voltage setting accuracy	$U_{i \text{ nom}}, I_{o \text{ nom}}$	$\pm 2 \text{ V } U_{o \text{ nom}}$
Output voltage noise	IEC/EN 61204, low frequency	typ. 5 V _{pp}
	IEC/EN 61204, switching frequency	typ. 25 mV _{pp}
Line regulation	$U_{i \text{ min}} \dots U_{i \text{ max}}, I_{o \text{ nom}}$	typ. $\pm 1 \text{ V}$
Load regulation	$U_{i \text{ nom}}, 10 \dots 100\% I_{o \text{ nom}}$	typ. 250 mV
	$U_{i \text{ nom}}, 0 \dots 10\% I_{o \text{ nom}}$	typ. 700 mV
Minimum output current	not required	0 A
Power limitation	approx. 1 s, restart after 3 s	typ. 240 W
Current limitation	approx. 1 s, restart after 3 s	typ. 200% $I_{o \text{ nom}}$
Operation in parallel	by load regulation	up to 5 units
Hold-up time	$U_o = 72 \dots 66 \text{ V DC}, P_o = 190 \text{ W}$	typ. 4.3 ms
	$U_o = 85 \dots 40 \text{ V DC}, P_o = 230 \text{ W}$	typ. 24 ms

Protection

Input undervoltage lockout		typ. 68 V AC
Input overvoltage lockout		typ. 306 V AC
Input transient protection	two varistors	
Output	no-load, overload and short circuit proof	
Output overvoltage	suppressor diode in each output	typ. 150% $U_{o, nom}$
Overtemperature	switch-off with auto restart	T_C typ. 110°C

Control

Status indication	LED: OK	
Isolated open collector signal	In OK/Out OK	feature D

Safety

Approvals	EN 60950, UL 1950, CSA C22.2 No. 950	
Class of equipment		class I
Protection degree		IP 40
Electric strength test voltage	I/case and O/case	1.5 kV AC

EMC

Electrostatic discharge	IEC/EN 61000-4-2, contact/air, level 2/3 (4/8 kV)	criterion B
Electromagnetic field	IEC/EN 61000-4-3, level 2 (3 V/m)	criterion A
Electr. fast transients/bursts	IEC/EN 61000-4-4, level 3 (2 kV)	criterion B
Surge	IEC/EN 61000-4-5, input, level 2/3 (1/2 kV)	criterion B
Conducted disturbances	IEC/EN 61000-4-6, level 2 (3 V)	criterion A
Electromagnetic emissions	CISPR 22/EN 55022, conducted	class B
	CISPR 14/EN 55014, radiated	below limit

Environmental

Operating ambient temperature	$U_{i, nom}$, $I_{o, nom}$, convection cooled	-25...71°C
Operating case temperature T_C	$U_{i, nom}$, $I_{o, nom}$	-25...95°C
Storage temperature	non operational	-40...100°C
Damp heat	IEC/EN 60068-2-3, 93%, 40°C	56 days
Vibration, sinusoidal	IEC/EN 60068-2-6, 10...60/60...150 Hz	0.35 mm/5 g_n
Shock	IEC/EN 60068-2-27, 11 ms	50 g_n
Bump	IEC/EN 60068-2-29, 11 ms	25 g_n
Random vibration	IEC/EN 60068-2-64, 20...500 Hz	4.9 $g_{n, rms}$
MTBF	MIL-HDBK-217E, G_B , 40°C, notice 2	763'000 h

Options

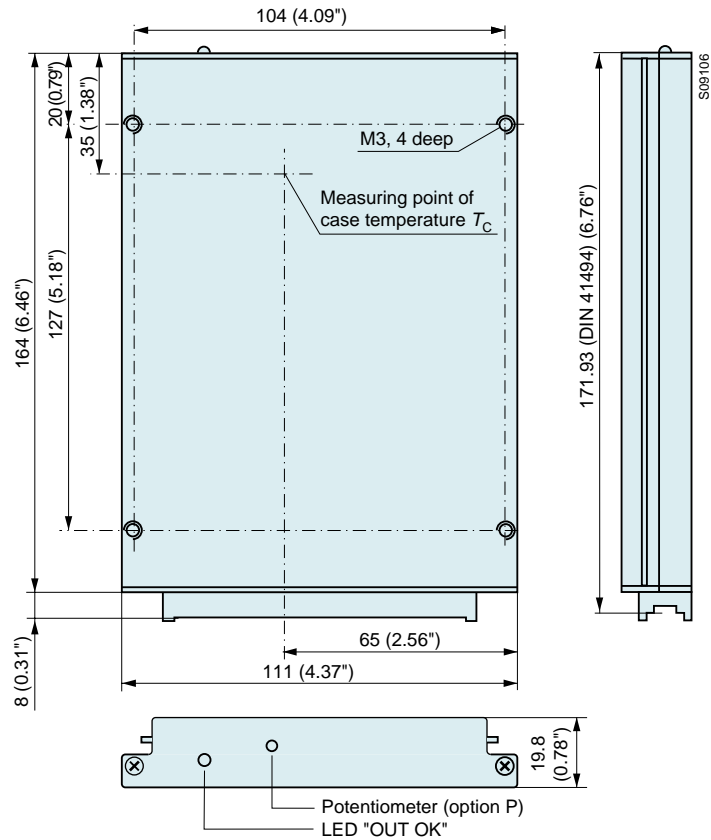
Extended temperature range	-40...71°C, ambient, operating	-9
----------------------------	--------------------------------	----

PC Series

190...230 Watt AC-DC Converters

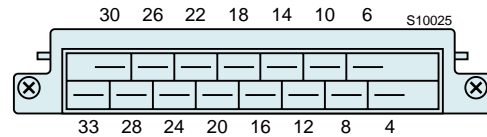
Mechanical data

Tolerances ± 0.3 mm (0.012") unless otherwise indicated.



Pin allocation

Pin no.	Electrical determination	
4	Output voltage negative	Vo-
6	Output voltage positive	Vo+
8	Phase	P \approx
10	Neutral	N \approx
12	Protective earth	\oplus
14	Protective earth	\oplus
16	-	n.c.
18	-	n.c.
20	Output good	Out OK+
22	Output good	Out OK-
24	-	n.c.
26	Output voltage positive	Vo+
28	Output voltage negative	Vo-
30	Output voltage positive	Vo+
32	Output voltage negative	Vo-

**Accessories**

Front panels 19" (Schroff/Intermas)

Mating H11 connectors with screw, solder, fast-on or press-fit terminals

Connector retention facilities and code key system for connector coding

Flexible PCB for connecting the converter via an H11 connector, if mounted on a PCB

Chassis or wall mounting plates for frontal access

Universal mounting brackets for chassis or DIN-rail mounting