

## KP Series with PFC

## 250 Watt AC-DC Converters



Input voltage from 187...255 V AC  
1 or 2 isolated outputs up to 56.5 V DC  
4 kV AC I/O electric strength test voltage



- Rugged electrical and mechanical design
- Integrated power factor correction
- No derating over ambient temperature range
- Special battery charging features

### Selection chart

Output 1		Output 2		Input voltage	Rated power	Type	Options
$U_{o \text{ nom}}$ [V DC]	$I_{o \text{ nom}}$ [A]	$U_{o \text{ nom}}$ [V DC]	$I_{o \text{ nom}}$ [A]	$U_i$ [V AC]	$P_{o \text{ tot}}$ [W]		
24	9.6	-	-	187...255	230	LKP 5662-7R	E, D, P, T, B1
24	10.4	-	-	187...255	250	LKP 5660-6R	E, D, P, T, B1
24	11.6	-	-	187...255	278	LKP 5661-5R	E, D, P, T, B1
25.25...28.25	8	-	-	187...255	226	LKP 5742-7R	E, D, P, T, B1
25.25...28.25	9	-	-	187...255	254	LKP 5740-6R	E, D, P, T, B1
25.25...28.25	10	-	-	187...255	282	LKP 5741-5R	E, D, P, T, B1
48	4.8	-	-	187...255	230	LKP 5662-7R	E, D, P, T, B1
48	5.2	-	-	187...255	250	LKP 5660-6R	E, D, P, T, B1
48	5.8	-	-	187...255	278	LKP 5661-5R	E, D, P, T, B1
50.5...56.5	4	-	-	187...255	226	LKP 5742-7R	E, D, P, T, B1
50.5...56.5	4.5	-	-	187...255	254	LKP 5740-6R	E, D, P, T, B1
50.5...56.5	5	-	-	187...255	282	LKP 5741-5R	E, D, P, T, B1
24	4.8	24	4.8	187...255	230	LKP 5662-7R	E, D, P, T, B1
24	5.2	24	5.2	187...255	250	LKP 5660-6R	E, D, P, T, B1
24	5.8	24	5.8	187...255	278	LKP 5661-5R	E, D, P, T, B1

**Input**

Input voltage AC		187...255 V AC
Input frequency		50/60 Hz
Power factor	per IEC/EN 61000-3-2	>95%
Inrush current limitation	by thermistor	

**Output**

Efficiency	$U_{i \text{ nom}}, I_{o \text{ nom}}$	up to 86%
Output voltage setting accuracy	$U_{i \text{ nom}}, I_{o \text{ nom}}$	$\pm 0.6\% U_{o \text{ nom}}$
Output voltage switching noise	IEC/EN 61204, total	typ. $0.6\% U_{o \text{ nom}}$
Line regulation	$U_{i \text{ min}} \dots U_{i \text{ max}}, I_{o \text{ nom}}$	typ. $\pm 0.1\% U_{o \text{ nom}}$
Load regulation	$U_{i \text{ nom}}, 0.1 \dots I_{o \text{ nom}}$ , symmetrical output load	typ. $0.4\%$
Minimum load	not required	0 A
Current limitation	foldback U/I characteristic	typ. $110 \dots 100\% I_{o \text{ nom}}$
Operation in parallel	by current limitation	
Hold-up time	$U_{i \text{ nom}}, I_{o \text{ nom}}$	9 ms

**Control and protection**

Input fuse	not user accessible	4 AT
Input undervoltage lockout		typ. $80\% U_{i \text{ min}}$
Input overvoltage lockout		typ. $115\% U_{i \text{ max}}$
Input transient protection	varistor	
Output	no-load, overload and short circuit proof	
Output overvoltage	suppressor diode in each output	typ. $130\% U_{o \text{ nom}}$
Overtemperature	switch-off with auto restart	$T_C$ typ. $100^\circ\text{C}$
Output voltage adjustment		$0 \dots 110\% U_{o \text{ nom}}$
Inhibit	TTL input, output(s) disabled if open circuit	
Status indication	LEDs: OK, inhibit, overload	

**Safety**

Approvals	EN 60950, UL 1950, CSA 22.2 No. 950	
Class of equipment		class I
Protection degree		IP 30
Electric strength test voltage	I/case	2 kV AC
	I/O	4 kV AC
	O/case	1 kV AC
	O/O	0.1 kV AC

**EMC**

Electrostatic discharge	IEC/EN 61000-4-2, level 4 (8/15 kV)	criterion A
Electromagnetic field	IEC/EN 61000-4-3, level 3 (10 V/m)	criterion A
Electr. fast transients/bursts	IEC/EN 61000-4-4, level 4 (2/4 kV)	criterion A
Surge	IEC/EN 61000-4-5, level 3 (2 kV)	criterion B
Conducted disturbances	IEC/EN 61000-4-6, level 3 (10 V)	criterion A
Electromagnetic emissions	CISPR 22/EN 55022	class B

**Environmental**

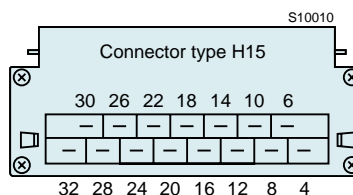
Operating ambient temperature	$U_{i\text{ nom}}, I_{o\text{ nom}}$ , convection cooled, -5	-25...50°C
	$U_{i\text{ nom}}, I_{o\text{ nom}}$ , convection cooled, -6	-25...60°C
	$U_{i\text{ nom}}, I_{o\text{ nom}}$ , convection cooled, -7	-25...71°C
Operating case temperature $T_C$	$U_{i\text{ nom}}, I_{o\text{ nom}}$	-25...90°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...2000 Hz	0.35 mm/5 g <sub>n</sub>
Shock	IEC/EN 60068-2-27, 6 ms	100 g <sub>n</sub>
Bump	IEC/EN 60068-2-29, 6 ms	40 g <sub>n</sub>
Random vibration	IEC/EN 60068-2-64, 20...500 Hz	4.9 g <sub>n rms</sub>
MTBF	MIL-HDBK-217F, G <sub>B</sub> , 40°C	514'000 h

**Options**

Electronic inrush current limitation		E
Output voltage adjustment	40...110% $U_{o\text{ nom}}$ , excludes feature R and vice versa	P
Input and/or output undervoltage monitoring		D0...D9
Current sharing		T
Cooling plate		B1

**Pin allocation**

Pin	LKP 5000	
4	Vo2+	Output 2
6	Vo2+	Output 2
8	Vo2-	Output 2
10	Vo2-	Output 2
12	Vo1+	Output 1
14	Vo1-	Output 1
16	R	Control of $U_{o1}$
18	i	Inhibit
20	D	Save data
22	T	Current sharing
24	⊕	Protective earth
26	N~	Neutral
28	N~	Neutral
30	P~	Phase
32	P~	Phase

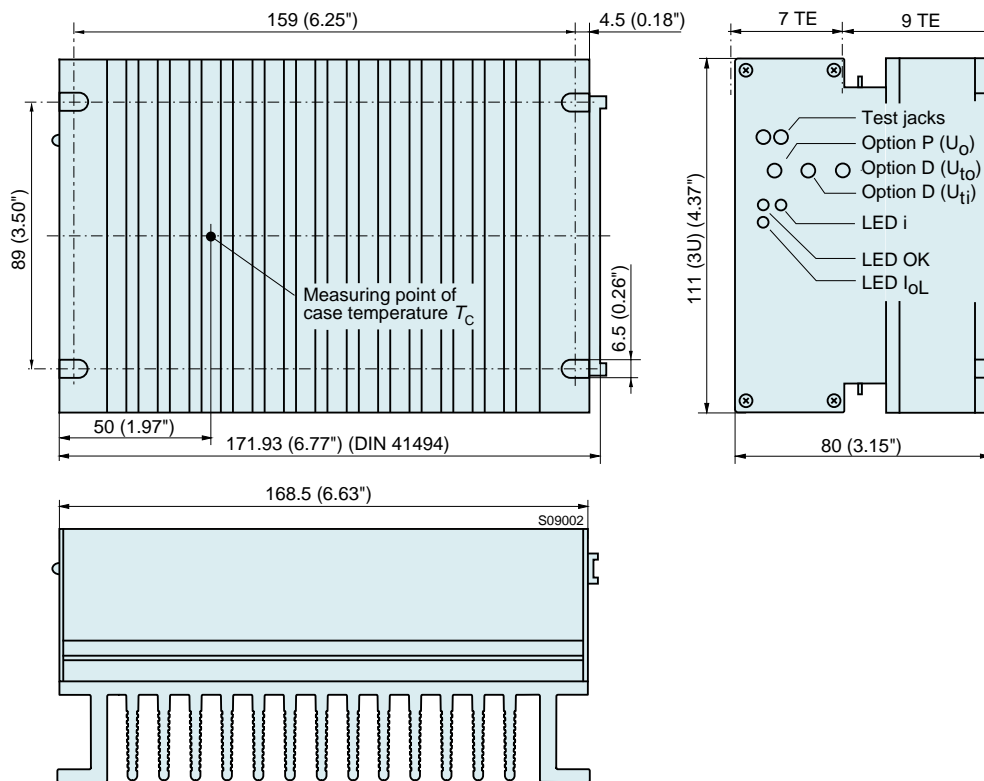


## Cassette Style

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### Mechanical data

Tolerances  $\pm 0.3$  mm (0.012") unless otherwise indicated.



### Accessories

- Front panels 19" (Schroff/Intermas)
- Mating H15 connectors with screw, solder, fast-on or press-fit terminals
- Connector retention facilities and code key system for connector coding
- Chassis or wall mounting plates for frontal access
- Universal mounting brackets for chassis or DIN-rail mounting
- Temperature sensor for battery charger