



DC-DC Converter AVP/KE-F

Output power up to 100 Watts

Isolated – Single Output
Chassis Mounting



Special Features

- Electrostatic discharge: 8kV contact (chassis), 15 kV air, (level 4) according to EN 61000-4-2:2009
- Fast transients (Burst): 2 kV (level 3) / (criterion A) / according to EN 61000-4-4:2004
- Surge: Input immunity 2 kV sym./asym. criterion A according to EN 61000-4-5:2006
- Conducted immunity 10V according to EN 61000-4-6:2007
- Conducted emission: Input filtering according to EN 55022:2006 class B****
- Zero load operation and short circuit protection
- Overtemperature shutdown
- Remote off (EN) with TTL – L-signal
- Overvoltage protection in the output, even in case of external supply (OVP)
- Reverse polarity protection by internal fuse (diode at $V_{in} = 110V$)
- Extremely low thermal stress of sensitive components due to dissipated power loss over lateral heatsink
- Yellow LED indicate operating mode

Technology

- Power section in 100kHz-MOS-FET-technology
- Regulator section in SMT
- Coated assembly
- Coated and glued parts for better vibration resistance

Specifications

at $\vartheta_{amb}=25^{\circ}C$, $V_{in nom}$, $I_{out nom}$

Temperature		
Ambient air	ϑ_{amb}	$= -40^{\circ}C...+85^{\circ}C$
Storage	ϑ_S	$= -40^{\circ}C...+100^{\circ}C$
Rise inside chassis	$\Delta\vartheta_{ci}$	$\leq 20 K$
Rise on heat sink	$\Delta\vartheta_K$	$\leq 35 K$

Output voltage		
Tolerance	ΔV_{out}	$\leq \pm 0,5 \%$ *
Ripple at $\vartheta_{amb} = -40^{\circ}C...+85^{\circ}C$	$V_{out ripple}$	$\leq 3,5 \%$
Temperature coefficient	TC	$\leq 0,016 \%/K$

Regulation at $\vartheta_{amb} = -40^{\circ}C...+85^{\circ}C$		
Line reg. for $V_{in range}$	ΔV_{out}	$\leq 2 mV$
Load reg. static	ΔV_{out}	$\leq 10 mV/A$
Load change (25°C)**	ΔV_{out}	$\leq 55 (45) mV/A$

Output "Power Good"		
Admissible voltage	V_{CEO}	$\leq 24 V$
Admissible current	I_c	$\leq 20 mA$
Saturation voltage	$V_{CE(sat)}$	$\leq 1,2 V$

OVP		
Starting point /%	$V_{out off}$	$\leq 130 \%$ $V_{out nom}$
Admissible continuous external current	I_{ext}	$\leq 6 A$

Isolation – voltage strength		
In-/Output	$V_{iso i/o}$	$\geq 1,5 kVrms$
Input to case	$V_{iso i/c}$	$\geq 1,5 kVrms$
Output to case	$V_{iso o/c}$	$\geq 0,5 kVrms$
Resistance In-/Output	R_{iso}	$\geq 1,5 G\Omega$
Capacitance In-/Output	C_{iso}	$\leq 7000 (4200) pF$

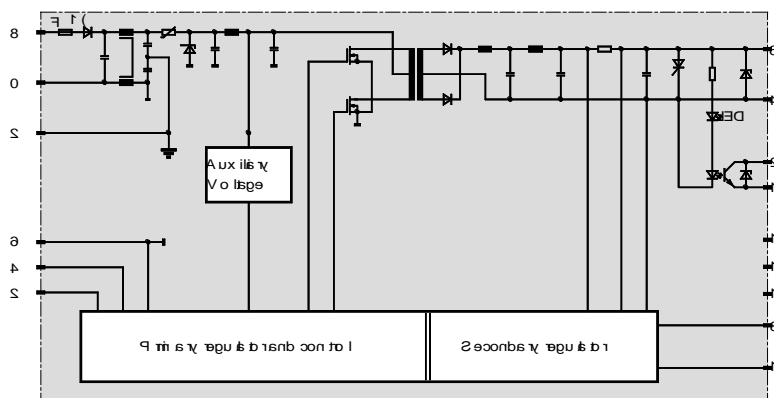
Degrees of protection (inserted in rack) = IP10****

Weight M ca. 1000 g

Block Diagram

- 4 = - V_{out}
- 6 = + V_{out}
- 8 = +S (Sense)
- 10 = -S (Sense)
- 12 = n.c.
- 14 = n.c.
- 16 = n.c.
- 18 = -PG (-Power Good)
- 20 = +PG (+Power Good)
- 22 = TR (Tracking)
- 24 = EN (ON/OFF)
- 26 = GND (TR and EN)
- 28 = + V_{in}
- 30 = - V_{in}
- 32 = \heartsuit / \clubsuit

Sense connection is not required.



1) only at $V_{in nom} = 110V$

* At 5V: 1%

** $I_{out min} = 0,1 I_{out nom}$

***Higher degrees of protection by properly mounting

**** In built-in condition our devices may show different EMC properties



Standard converters AVP/KE-F

V_{out} V	$I_{out}^{(2)}$ A	$\eta^{(3)}$ %	$V_{PG}^{(5)}$ VDC	$V_{in,nom}$ VDC	$V_{in,operating}$ VDC	$V_{in,range}$ VDC	$I_{in,max}$ A	Internal Fuse A	Order Numbers
5 ¹⁾	7,5	79	> 3,5	12/24 ⁴⁾	9...30	9...40 ⁴⁾	11	16	09 55 61 0102 6
	10	80		24	16,8...30	15...36	8	16	09 55 91 0102 9
	10	81		36	24,2...45	19...51	6	10	09 55 31 0102 3
	10	84		48	33...60	32...74	3,5	6,3	09 55 51 0102 8
	10	85		72	50...90	43,2...101	2,6	3,6	09 55 21 0102 5
	10	85		110	77...138	66...154	1,7	2,5	09 55 71 0102 4
12	6	80	> 9,5	12/24 ⁴⁾	9...30	9...40 ^{4) 6)}	11	16	09 55 62 0102 5
	8	83		24	16,8...30	15...36	8	16	09 55 92 0102 8
	8	84		36	24,2...45	19...51	6	10	09 55 32 0102 2
	8	86		48	33...60	32...74	3,5	6,3	09 55 52 0102 7
	8	87		72	50...90	43,2...101	2,6	3,6	09 55 22 0102 4
	8	87		110	77...138	66...154	1,7	2,5	09 55 72 0102 3
15	4,9	81	> 13	12/24 ⁴⁾	9...30	9...40 ^{4) 6)}	11	16	09 55 63 0102 4
	6,5	83		24	16,8...30	15...36	8	16	09 55 93 0102 7
	6,5	85		36	24,2...45	19...51	6	10	09 55 33 0102 1
	6,5	86		48	33...60	32...74	3,5	6,3	09 55 53 0102 6
	6,5	87		72	50...90	43,2...101	2,6	3,6	09 55 23 0102 3
	6,5	87		110	77...138	66...154	1,7	2,5	09 55 73 0102 2
24	3	82	> 21	12/24 ⁴⁾	9...30	9...40 ⁴⁾	11	16	09 55 64 0102 3
	4	84		24	16,8...30	15...36	8	16	09 55 94 0102 6
	4	85		36	24,2...45	19...51	6	10	09 55 34 0102 9
	4	86		48	33...60	32...74	3,5	6,3	09 55 54 0102 5
	4	87		72	50...90	43,2...101	2,6	3,6	09 55 24 0102 2
	4	87		110	77...138	66...154	1,7	2,5	09 55 74 0102 1

Reference numbers for option "EMC fingerstrips" and other options on request

- 1) Adjusted to 5,1V
- 2) At -40°C...+70°C
Derating: between 70°C and 85°C: 4%/°C
- 3) Typical at $V_{in,nom}$
- 4) Output current 75% of the table values
- 5) V_{PG} = Switching point for the output level "Power Good"
- 6) Like 4) + additional derating from 55°C...70°C: 2%/°C

Models in blue are not recommended for new designs.
Models in red are obsolete.