

KPX101 AC/DC CONVERTER

Technical Data Sheet



Kuerzi Avionics AG
Flugplatz
CH-9506 Lommis

info@kuerzi.com
www.kuerzi.com

Tel. +41 52 376 22 27

Description

The KPX101 AC/DC CONVERTER is a solid state, 3 phase, 115VAC to 28VDC, 1000W converter with an input frequency range of 360-800Hz as required by the latest generation aircraft such as the A380 or the B787.

Each of the three phases includes an active power factor correction module. The internal parameters of the KPX101 are measured and transmitted to external devices using the integrated Aerospace Standard CAN bus. The CAN bus is configured by a dedicated configuration module which is located in the wiring loom simplifying unit interchangeability. The Aerospace Standard CAN is compatible with Kuerzi Avionics' Multi Mission System (MMS).

Besides the main 28VDC power output the KPX101 also contains two auxiliary 28VDC outputs. These can be used to supply additional supporting circuits such as an external fan. A discrete external enable signal allows these outputs to be switched on/off. The KPX101 contains a discrete input and transmits a CAN bus alarm message based on its state. This allows monitoring of an external signal such as fan speed.

The KPX101 meets aviation standards and requirements and is delivered with an EASA Form 1.

Certification data will be delivered on request. In addition we offer the entire certification work for your particular aircraft type and installation.

Basic functions:

- Voltage conversion 3*115VAC to 28VDC
- Inrush current limitation functionality
- Output voltage, current & power transmission on CAN BUS
- External enable signal
- Two external +28VDC auxiliary outputs
- Monitoring of external digital signal

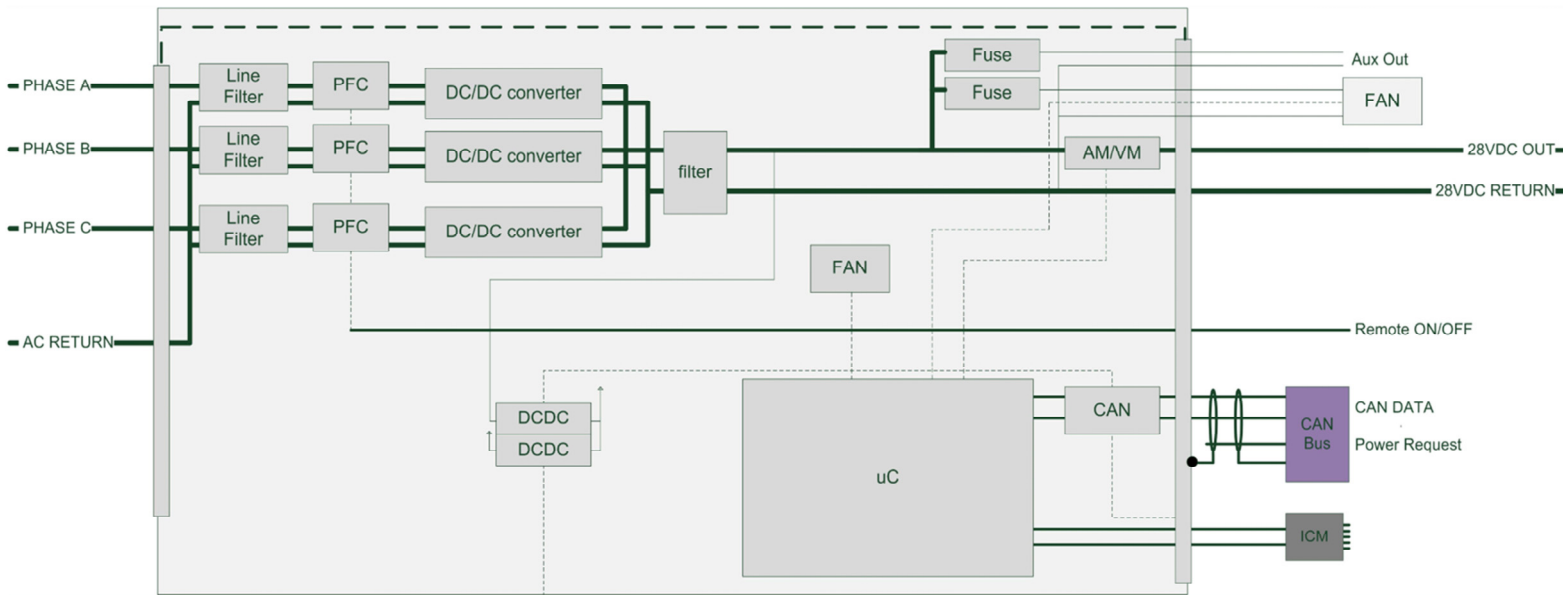
Protection features:

- Output current limitation and short protection: 60A current limitation (output off switching)
- Output power limitation: thermal protection & limitation
- Output over-voltage protection: 38.5V
- Thermal shutdown: 90°C internal base plate temperature
- Thermal environment limitation: 55°C 1000W output, 70°C limited to 20min

Interfaces:

- Input voltage: 115Vrms (100 - 122Vrms) at 360 - 800Hz sine wave form
- Input protection: 7.5A 3 phase circuit breaker
- Output voltage: +28VDC
- External enable: on (open) / off input < 2VDC
- Auxiliary outputs: limited to 5A
- External fan monitoring: pulse monitoring

Principle Diagram



Technical Specifications

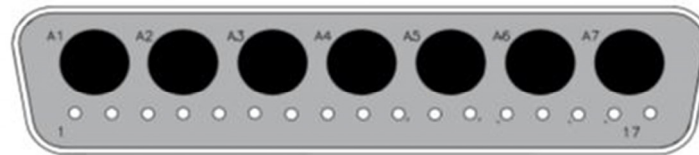
Nominal Operating Input Voltage	115.00 V
Max Operating Voltage	3 phase 180 Vrms 360-800Hz
Nominal Operating Input Current	4.00 A
Max Input Current	6.50 A
Min Operating Temperature	-15°C (120 minutes -40°C)
Max Operating Temperature	+55°C (20 minutes +70°C)
General comment	Designed for Part 25 aircraft operation
Flammability	Proven avionics components in metallic case
Nominal Operating Input Power	1'380.00 W
Output Power	1'000.00 W

Environmental Specifications according DO-160 / ED-14

Temperature and Altitude	DO-160G Section 4 Cat. A1
Operational Shock and Crash Safety	DO-160G Section 7 Cat. B
Vibration	DO-160G Section 8 Cat. S
Power Input	DO-160G Section 16 Cat. A, Cat. P
Voltage Spike	DO-160G Section 17 Cat. A
Emission of Radio Frequency Energy	DO-160G Section 21 Cat. M

Interface

Connector	Pin	PIN Functions	Wire Type	EMC Class	Input	Output	Current	Description
J1	A1	115VAC PWR L1 IN	E		X		40A	High Power Contacts, Straight Cable Termination AWG 8-12
	A2	115VAC PWR L2 IN	E		X		40A	High Power Contacts, Straight Cable Termination AWG 8-12
	A3	115VAC PWR L3 IN	E		X		40A	High Power Contacts, Straight Cable Termination AWG 8-12
	A4	115VAC PWR N IN			X		40A	High Power Contacts, Straight Cable Termination AWG 8-12
	A5	N/C					40A	High Power Contacts, Straight Cable Termination AWG 8-12
	A6	+28VDC PWR OUT	E			X	40A	High Power Contacts, Straight Cable Termination AWG 8-12
	A7	PWR GND OUT				X	40A	High Power Contacts, Straight Cable Termination AWG 8-12
	1	N/C						
	2	N/C						
	3	N/C						
	4	N/C						
	5	N/C						
	6	N/C						
	7	GND OUT					X	5A general purpose GND output
	8	+28VDC OUT					X	5A Fused general purpose 28VDC output
	9	GND AUX			X	X	5A	AUX 0V
	10	+28VDC AUX				X	5A	AUX 28V power Fan
11	AUX IN			X		<1A	AUX input FAN monitor	
12	DSink					X	5A, switchable general purpose GND output	
13	Enable						<1A OPEN enabled ON GND disabled OFF	
14	ICM HI				X	X	5A Configuration module	
15	ICM LOW				X	X	5A Configuration module	
16	CAN HI				X	X	<1A CAN bus hi	
17	CAN LOW				X	X	<1A CAN bus low	

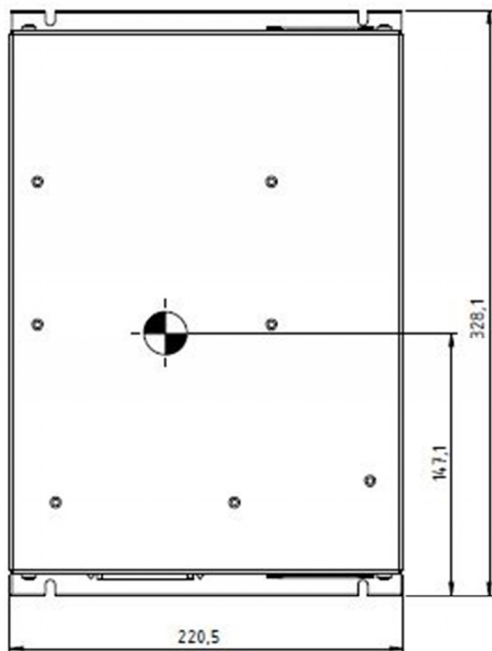
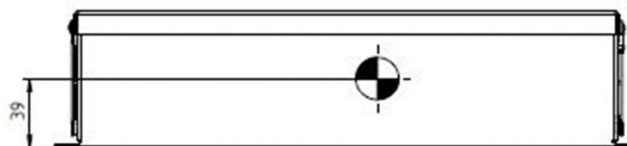
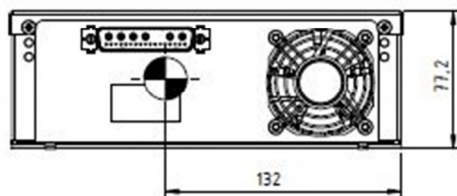


FM24W7

Front view of connector Type FM24W7

Mechanical Dimensions

Weight of the unit	5.00 Kg
Weight of the unit including required installation materials (w/o wiring)	5.15 Kg
All dimensions [mm]	



Configuration / Ordering Data

Part Number	Type	Description
1314093.11	KPX101	115VAC 3 phase to 28VDC converter 1000W

Additional Parts for installation:

Qty	Part Number	Description
1	FM24W7SAK121	D-SUB, SOCKET, 24POL, SDLR, MIXED W/ 7 PWR CONTACT
17	M39029/63-368	CONTACT, SOCKET, AWG20-24, D-SUB, CRIMP
2	FMP004S103	BUCHSENKONTAKT, CRIMP, AWG10-8, 40A
5	FMP005S103	BUCHSENKONTAKT, LÖTVERSION, AWG20-16
1	D50000ANVL0	D-SUB, CASE ALU, 50POL, VIBRATION LOCK LEVER
1	09-9748-00-03	INLINE PLUG, SOCKET, 3POL, AWG24, SOLDER
1	1212911.7	KME136 INTEGRATED CONFIGURATION MODULE