

DESCRIPTION

PRODUCT COVERED:

USR, CNR - Component - Power Supplies, Models: PAF600F280 and PAF450F280 series, for use in Information Technology Equipment Including Electrical Business Equipment

GENERAL CHARACTER AND USE:

The units covered by this Report are DC to DC converters. They are provided with input and output pins for PWB connection in the end use equipment.

MODELS AND RATINGS:INPUT:

<u>Model</u>	<u>Input</u>		<u>Output</u>		<u>Rated Power (W)</u>
	<u>Voltage (Vdc)</u>	<u>Operating Current (A) Max.</u>	<u>(Vdc)</u>	<u>Rated Current (A)</u>	
PAF600F280-12	200-400	4.0	12	50	600
PAF600F280-24	200-400	4.0	24	25	600
*PAF600F280-28	200-400	4.0	28	21.5	602
PAF600F280-48	200-400	4.0	48	12.5	600
PAF600F280-24/KTH	245-373	4.0	28	25	700
*PAF450F280-12	200-400	3.0	12	38	456
*PAF450F280-24	200-400	3.0	24	19	456
*PAF450F280-28	200-400	3.0	28	16.5	462
*PAF450F280-48	200-400	3.0	48	9.5	456

Models may be followed by optional suffix denoting minor variations which are not related to safety aspects : "/" and any alphanumeric characters.

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ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

For use only in complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

USR, CNR indicates Safety of Information Technology Equipment - Safety - Part 1: General Requirements, UL 60950-1, Second Edition, dated 2014-10-14 and CSA C22.2 No. 60950-1-07, Second Edition, dated 2014-10 bi-national standard.

USR, CNR indicates investigation to UL 62368-1, 2nd Edition, dated 2014-12-01 (Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements) and CSA C22.2 No. 62368-1-14, 2nd Edition, dated 2014-12-01 (Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements).

Conditions of Acceptability - When installed in the end use equipment, the following are among the considerations to be made.

1. The component has been judged on the basis of the required creepage and clearance distances in the Standard for Safety of Information Technology Equipment - Safety - Part 1: General Requirements, UL 60950-1, Second Edition, dated 2014-10-14 and CSA C22.2 No. 60950-1-07, Second Edition, dated 2014-10 bi-national standard, **UL 62368-1, 2nd Edition, dated 2014-12-01 (Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements), and CSA C22.2 No. 62368-1-14, 2nd Edition, dated 2014-12-01 (Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements)**, which would cover the end use product for which the component was designed.

NOTE IMPORTANT SAFETY CONSIDERATION FOR INSTALLATION: -

- a) These products shall be installed in accordance with the requirements of UL 60950-1, Second Edition, dated 2014-10-14, Information Technology Equipment - Safety - Part 1: General Requirements and CAN/CSA C22.2 No. 60950-1-07, Second Edition, dated 2014-10, Information Technology Equipment - Safety - Part 1: General Requirements, **UL 62368-1, 2nd Edition, dated 2014-12-01 (Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements), and CSA C22.2 No. 62368-1-14, 2nd Edition, dated 2014-12-01 (Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements)** for the end use application. The DC to DC converters were tested with a heatsink mounted below the baseplate of the device (worst case).

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- b) **These products must be installed in a host equipment accessible to authorized competent personnel only. These products were assessed for reinforced insulation at working voltage between input and output. These converters may have a mains derived DC supply attached to the input and still provide a SELV /ES1 output. All outputs are at hazardous energy levels. To maintain the SELV / ES1 output under fault conditions, the output must be connected to earth in the final application.**
- c) The DC to DC converter baseplate shall be properly bonded to earth ground in the end use product as this unit was investigated for Class I construction. Basic insulation from primary to baseplate and secondary to baseplate is present. However to maintain SELV/**ES1**, the baseplate must be earthed.

- d) The operation of these DC to DC converters is subject to the end customer maintaining a maximum baseplate temperature of:
PAF600F280. 85°C at 100% load and 100°C at 80% load
PAF450F280. 100°C at 100% load.
PAF600F280-24/KTH - 70°C at 100% load, **75°C at 80% load**, 90°C at 30% load in accordance with the de-rating curve included within the specification for this model.
- e) The input and output connectors are not acceptable for field wiring connections and are only intended for connection to a PCB inside the end use equipment.
- f) The Listed input fuse rating used during testing was: F6.3AH 250V. The breaking capacity and voltage rating are subject to the end use application.

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- g) Transformer T102 uses spirally wrapped triple insulated wire with a class H insulation. Transformer T3 uses extruded triple insulated wire with a class F insulation.
- h) The input to this product was considered to be DC provided from a non isolated 250VAC source.
- i) The equipment has been evaluated for use in a Pollution Degree 2 environment.
- j) A suitable electrical (and fire enclosure, **if the Top Cover is not secured in a sufficiently reliable**) shall be provided.
- k) **The output of all models are ES1 and PS3.**
- l) **Humidity conditioning has been conducted by tropical condition.**
- m) **Classification of PIS has not been conducted. However, Top Cover, Case and baseplate have been evaluated as fire barriers to any PIS parts and/or components inside the unit except for reliability of fixing mean of Top Cover Consideration shall be given in end product application for securing Top Cover.**
- n) **This component has been evaluated in 'control of fire spread' method, and the Case, baseplate (and Top Cover) have been evaluated as a fire barriers.**

- o) The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Secondary: 482Vrms, 1.22kVpk
- p) The maximum investigated branch circuit rating is 20A.
- q) The power supply was evaluated to be used at altitude up to 2000m.
- r) The power supply terminals and/or connectors are suitable for factory wiring only.