

File E186249
Project 03CA43842

Issued: April 2, 2004
Revised: February 27, 2006

REPORT

On

*COMPONENT - POWER SUPPLIES INFORMATION TECHNOLOGY EQUIPMENT

Astec International Limited - Philippine Branch
Quezon City 1110, Philippines

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DESCRIPTION

PRODUCT COVERED:

USR, CNR Component - Switching Power Supplies, Models NTS353, NTS358, NTS359 and NTS355 for use in Information Technology Equipment.

ELECTRICAL RATINGS:

MODEL	INPUT	OUTPUT
NTS353	AC 100 - 250 V 5.4 A 50 / 60 / 440 Hz	350 W with 30 CFM FORCED AIR OR WITH COVER AND BUILT-IN FAN +/- 12.0 V, 29.17 A MAX +5 VSTBY, 2.0 A MAX +12 V (FAN_OUT), 1.0 A MAX
		220 W with 30 CFM FORCED AIR AT 71 to 75°C AMBIENT +/- 12.0 V, 18.34 A Max, +5 VSTBY, 2.0 A Max, +12 V (FAN_OUT), 1.0 A Max,
		200 W CONVENTION COOLING +/- 12.0 V, 16.67 A MAX +5 VSTBY, 1.0 A MAX +12 V (FAN_OUT), 0.5 A MAX
		DC 120 V MIN - 300V MAX 5.4 A
NTS358	AC 100 - 250 V 5.4 A 50 / 60 / 440 Hz	350 W with 30 CFM FORCED AIR OR WITH COVER AND BUILT-IN FAN +/- 48.0 V, 7.29 A MAX +5 VSTBY, 2.0 A Max +12 V (FAN_OUT), 1.0 A MAX
		200 W CONVENTION COOLING +/- 48.0 V, 4.2 A MAX +5 VSTBY, 1.0 A MAX +12 V (FAN_OUT), 0.5 A MAX
		DC 120 V MIN - 300 V MAX 5.4 A
NTS355	AC 100 - 250 V 5.4 A 50 / 60 / 440 Hz	350 W with 30 CFM FORCED AIR OR WITH COVER AND BUILT-IN FAN +/- 24 V, 14.58 A MAX +5 VSTBY, 2.0 A Max +12 V (FAN_OUT), 1.0 A MAX
		200 W CONVENTION COOLING +/- 24 V, 8.33 A MAX +5 VSTBY, 1.0 A MAX +12 V (FAN_OUT), 0.5 A MAX
		DC 120 V MIN - 300 V MAX 5.4 A

ELECTRICAL RATINGS: (Cont')

		350 W with 30 CFM FORCED AIR OR WITH COVER AND BUILT-IN FAN	
NTS359	AC 100 - 250 V	+/- 54.4 V,	6.43 A MAX
	5.4 A	+5 VSTBY,	2.0 A Max
	50 / 60 / 440 Hz	+12 V (FAN_OUT),	1.0 A MAX
	OR	200 W CONVENTION COOLING	
	DC 120 V MIN - 300 V MAX	+/- 54.4 V,	3.67 A MAX
	5.4 A	+5 VSTBY,	1.0 A MAX
		+12 V (FAN_OUT),	0.5 A MAX

Maximum continuous output power is 350 W with 30 CFM forced air cooling, or with cover and built-in fan.

Maximum continuous output power is 220 W with 30 CFM forced air cooling, unit without cover, for 71°C to 75°C ambient.

Maximum continuous output power is 200 W with natural convection cooling, unit without cover.

Each output derates 2.5% per degree from 50°C to 70°C ambient temperature.

TECHNICAL CONSIDERATIONS (NOT FOR UL REPRESENTATIVE'S USE):

General - These units are for use in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

* Both USR and CNR indicate investigation to the Standard for Safety of Information Technology Equipment **UL 60950-1, Second Edition** and CAN/CSA-C22.2 No. **60950-1-07, Second Edition**.

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

- *1. These components have been judged on the basis of the required creepages and clearances in the First Edition of the Standard for Safety of Information Technology Equipment **UL 60950-1, Second Edition** and **CAN/CSA-C22.2 No. 60950-1-07, Second Edition**, Sub-clause 2.10, which covers the end-use product for which the component was designed. The functional insulations have been evaluated by conducting Component Failure Test per Sub-clause 5.3.4(c) of **UL 60950-1, Second Edition** and **CAN/CSA-C22.2 No. 60950-1-07, Second Edition**.
2. These power supplies have only been evaluated for use in a pollution degree 2 environment.
- *3. These power supplies were evaluated with the assumption that the power source is a TN system as defined by **UL 60950-1, Second Edition** and **CAN/CSA-C22.2 No. 60950-1-07, Second Edition**.
4. A suitable enclosure shall be provided by end use equipment.
- *5. These power supplies have been evaluated for use in Class I equipment as defined in **UL 60950-1, Second Edition** and **CAN/CSA-C22.2 No. 60950-1-07, Second Edition** and shall be properly earthed or bonded to earth in the end-use. An additional evaluation shall be made if the power supply is intended for use in other than Class I equipment.
- *6. The secondary outputs of these power supplies are unearthed non-energy hazard SELV except for +/- 12 V for Model NT353 and +/- 48 V for Model NTS358, +/- 54.4 V for Model NTS359 and +/- 24 V for Model NTS355 main output which is at hazardous energy level. Sub-clause **2.9.4** per **UL 60950-1, Second Edition** and **CAN/CSA-C22.2 No. 60950-1-07, Second Edition** were used to maintain the insulation of SELV from primary circuits.
7. These power supplies have been evaluated for use in 25°C, 50°C and 70°C ambient. Model NTS353 has been evaluated at 75°C ambient at 220 W load with 30FM forced air cooling. At this ventilation condition, NTS353 power supply can be operated beyond 70°C up to 75°C ambient, but maximum output load must not exceed 220W.
8. Transformers, T1, T2, and T4 employ Class F electrical insulation system.
9. The input and secondary output connectors have not been evaluated for field connections.
- *10. These power supplies are classified Level 5 as defined by **UL 60950-1, Second Edition** and **CAN/CSA-C22.2 No. 60950-1-07, Second Edition**.
11. A suitable power supply disconnection means is to be provided by the end-use equipment.

12. These power supplies have been evaluated under a specified forced air-cooling and convection cooling. Refer to ILL. 3 for details of forced air-cooling ventilation system.
13. Earth Leakage current exceeds 3.5 mA at 440 Hz. Earth connection is essential when connecting supply.

14. These building-in power supplies are only for use in stationary permanently connected equipment or stationary Pluggable Equipment Type B having a main protective earthing terminal.
15. Protective bonding conductor in the end system should not be less than 1.0 mm² in cross-sectional area.