

DESCRIPTION

PRODUCTS COVERED:

USL, CNL - Switching power supplies, Models HWS300-5, HWS300-12, HWS300-24, HWS300-48. All models may have suffix, /MF.

USL, CNL - Switching power supplies, Model HWS300-24/RV.

GENERAL:

These devices are open-type switching power supplies, employing an Isolating-Type, Step-down Transformer and related circuitry enclosed within a metallic cover. These power supplies are intended for use in industrial control applications, in a pollution degree 2 environment.

ELECTRICAL RATINGS:

Electrical Ratings:

Model	Input, ac/dc			Output, ac/dc	
	V (ac)	Hz	A	V (dc)	A
HWS300-5	100-240	50/60	4.1	5	60 (†)
HWS300-12	100-240	50/60	4.1	12	27 (†)
HWS300-24	100-240	50/60	4.1	24	14 (†)
HWS300-24/RV	100-240	50/60	4.1	24	14 (†)
HWS300-48	100-240	50/60	4.1	48	7 (†)

Environmental Ratings:

Max. surrounding air temperature, 70°C (†)

Note:

(†) - The Load factor-Surrounding air temperature derating curve explains the characteristics between the permissible load factor and the surrounding air temperature shown in ILL. 2 is the part of the Power Output rating.

NOMENCLATURE:

This device is designated as follows:

HWS	300	-	5		/MF
I	II		III	IV	V

I. Basic Series Designation

HWS

II. Output Wattage

300 - 300 W

III. Output Voltage Rating

5 - 5 Vdc
12 - 12 Vdc
24 - 24 Vdc
48 - 48 Vdc

IV. Optocoupler

/RY - Use relay instead of optocoupler in signal circuit
Blank - Use optocoupler in signal circuit

V. Optional suffixes for sales purpose

/MF - For specific customers (except HWS300-24/RY).
Construction is identical with basic models.
There is no change to critical components.

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

* USL - Indicates Investigated **to the United States** Standard **noted in the Test Record.**

* * CNL - Indicates Investigated **to Canadian National** Standard **noted in the Test Record.**

Note: CNL = Canadian National Standards - Listed

USL = United States Standards - Listed

CONSTRUCTION DETAILS

* Spacings were evaluated to the **Standards noted in the Test Record.**

Spacings other than at field-wiring terminals of pollution degree 2 environment:

Potential Involved, Vrms	Minimum Spacings ^a mm Over surface (mm)	Through-Air (mm) Peak
0 - 50 (0 - 70.7)	1.2	1.2
51 - 125 (72.1 - 176.8)	1.6	1.6
126 - 250 (178.1 - 353.5)	2.4	2.4

On printed-wiring boards, their connectors, and board-mounted electrical components, wired on the load side of the line filters or similar voltage peak reduction networks and components, a minimum spacing of 0.023 in. (0.584 mm) plus 0.0002 in. (0.005 mm) per volt peak shall be maintained over surface and through air between uninsulated live parts and any other uninsulated live or dead conductive parts not of the same polarity.

Over-surface spacings (creepage) and through air spacings (clearances) are maintained at a minimum of 2.4 mm between primary and secondary circuits.

Spacings at field-wiring terminals for pollution degree 2 environments are maintained at a minimum of 6.4 mm (1/4 in.) through-air and over-surface, between field wiring terminals, and between field-wiring terminals and other uninsulated parts not always of the same polarity.

Corrosion Protection - All ferrous metal parts are suitably protected against corrosion by painting, plating or the equivalent.

Internal Wiring - All wiring is R/C - AWM (AVLV2), rated min. 80°C, 300 V. All wiring routed away from sharp edges. All wiring shall be PVC, TFE, PTFE, FEP or marked VW-1.

Connections - All electrical connections made by wiring mechanically secured before soldering, or terminated in Listed closed-loop type, unturned-end type, or male/female quick-disconnect type connectors with positive engagement.

*Printed Wiring Boards - All printed wiring boards are R/C (ZPMV2), rated min. **130°C**, with flammability rating of V-2 or better.

General - All components are lead mounted and soldered through holes in printed wiring board, unless otherwise specified. All resistors are carbon composition, wire wound or metal film and capacitors are film, metalized paper, or ceramic, unless otherwise specified.

Marking - Permanent Label, Silk-screen, or Laser Printed:

- 1) Listee's name, File Number: E227701, or trademark,
- 2) model designation,
- 3) electrical ratings
Input - volts, frequency and either amperes, watts or
Volt-amperes
Output - volts, ac or dc, and either amperes, watts or
Volt-amperes

The following marking or equivalent shall also be provided on the unit or shipped separately with the device (within installation instructions or user's manual):

- 1) "Use min. 60°C or 60/75°C wire".
- 2) "Use copper conductors only" or equivalent.
- 3) "G", "GR", "Ground", "Grounding" or the symbol of IEC5019 located adjacent to the ground terminal.
- 4) Wiring diagram indicating proper connections to the supply, load and the like.
- 5) "Pollution Degree 2"

Warning Markings - See Section General for details.

Electrical Tubing and Sleeving - R/C - Tubing (YDPU2) and/or Sleeving (UZFT2), rated 300 V, 105°C min.