

DESCRIPTION

PRODUCTS COVERED:

*USL, CNL - Switching power supplies, Models HWS150A-3, HWS150A-5, HWS150A-12, HWS150A-15, HWS150A-24, HWS150A-48, followed by /, may be followed by HD, may be followed by R, followed by A, **may be followed by CO2**, may be followed by FG, **may be followed by DIN**.

Switching Power Supply, Models HWS150A-, followed by 12, 15, 24 or 48, followed by /E, followed by H or V, may be followed by HD, may be followed by R, followed by A, may be followed by CO2, may be followed by FG, may be followed by DIN.

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.

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ELECTRICAL RATINGS:

Model	Power Input			Power Output		
	V (ac)	Hz	A	V (dc)	A (max.)	w (max.)
HWS150A-3	100-240	50-60	1.3	3.3 (2.97-3.96)	30	99.0
HWS150A-5	100-240	50-60	2.0	5 (4.0-6.0)	30	150.0
HWS150A-12	100-240	50-60	2.0	12 (9.6-14.4)	13	156.0
HWS150A-15	100-240	50-60	2.0	15 (12.0-18.0)	10	150.0
HWS150A-24	100-240	50-60	2.0	24 (19.2-28.8)	6.5	156.0
HWS150A-48	100-240	50-60	2.0	48 (38.4-52.8)	3.3	158.4

The permissible maximum output current is specified in the derating curve related to the surrounding air temperature, and mounting direction. See ILL. 1 for derating curve **of models without suffix "/E", and ILL. 1A for derating curve of models with suffix "/E"**.

ENVIRONMENTAL RATINGS: Maximum Surrounding Air Temperature - 70°C.

NOMENCLATURE

For models without suffix "/E":

Example:

HWS150A-	3	/	HD	R	A	CO2	FG	DIN
A	B		C	D	E	F	G	H

A - Basic type

B - Output voltage rating

3: 3.3 V

5: 5 V

12: 12 V

15: 15 V

24: 24 V

48: 48 V

C - Conformal coating for PWB **(1)**

None: Not provided

HD: Provided

D - Remote control function

None: Not provided

R: Provided

E - Cover

A: Provided

F - **Conformal coating for PWB (2)****None: Not provided****CO2: Provided*****G - Low leakage current type*** None: Not **applied*** FG: **Applied****H - DIN rail mounting type****None: Not applied*** DIN: **Applied**

NOMENCLATURE (cont'd)

For models with suffix "/E":

Example:

HWS150A-	12	/	E	H	HD	R	A	CO2	FG	DIN
A	B		C	D	E	F	G	H	I	J

A - Basic type

B - Output voltage rating

12: 12 V

15: 15 V

24: 24 V

48: 48 V

C - Terminal

E : European Terminal

D - Terminal orientation

H: Horizontal type

V: Vertical type

E - Conformal coating for PWB (1)

None: Not provided

HD: Provided

F - Remote control function

None: Not provided

R: Provided

G - Cover

A: Provided

H - Conformal coating for PWB (2)

None: Not provided

CO2: Provided

I - Low leakage current type

None: Not applied

FG: Applied

J - DIN rail mounting type

None: Not applied

DIN: Applied

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

USL - Indicates have been investigated using United States requirements as noted in the Test Record.

CNL - Indicates have been investigated using Canadian requirements as noted in the Test Record.

Note: CNL = Canadian National Standards - Listed

USL = United States Standards - Listed

CONSTRUCTION DETAILS

Spacings were evaluated using requirements as noted in the Test Record.

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

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.

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Summary of Figures and Illustrations - The following figures and illustrations are included in this Report.

FIG. or ILL. No.	Description
FIG. 1, and FIG. 2	Overall views of models without suffix "/E"
FIG. 3	Internal view of models without suffix "/E"
FIG. 4	Overall sides view 1 of models with suffix "/E"
FIG. 5	Overall sides view 2 of models with suffix "/E"
FIG. 6	Internal view for models with suffix "/E"
FIG. 7	Printed Wiring Board of models with suffix "/E"
FIG. 7A	Alternate Printed Wiring Board of models with suffix "/E"
FIG. 8	Overall view of metal chassis for models without suffix "/E"
FIG. 9	Overall view of alternate metal chassis for models without suffix "/E"
FIG. 10 and FIG. 11	Overall view of alternate metal chassis for models with suffix "/E"
ILL. 1	Derating Curve of models without suffix "/E"
ILL. 1A	Derating curve of models with suffix "/E"
ILL. 2	Insulation Sheet of models without suffix "/E"
ILL. 2-1	Alternate Insulation Sheet of models without suffix "/E"
ILL. 2A	Insulation Sheet of models with suffix "/E"
ILL. 2B	Alternate Insulation Sheet of models with suffix "/E"
ILL. 3	PWB Trace of models without suffix "/E"
ILL. 3A	PWB Trace of models with suffix "/E"
ILL. 3B	Alternate PWB Trace of models with suffix "/E"
ILL. 4	Transformer T2
ILL. 5	Coating area details for models without suffix "/E"
ILL. 6	Coating area details for models with suffix "/E"

MARKINGS:

The following marking shall be appeared on the device by molded, die-stamped, paint-stenciled, stamped, etched metal, laser engraved or on a label R/C (PGDQ2/8) or (PGJI2/8). No. 1 through No. 3 shall be visible when the device is mounted singularly.

1. Listee's name, trademark or trade name.
2. Catalog number.
3. Electrical rating.
4. For USL models, "Use wires suitable for at least 75°C" or "Use wires rating at least 75°C" or equivalent.
5. "For use in Pollution Degree 2 Environment" or "Pollution Degree: 2" or equivalent.
6. "Maximum surrounding air temperature 70°C" or "Max. surrounding air temperature: 70°C" or equivalent.
7. The month and year of manufacture or date coding serial numbers.
- *8. "See derating curves and mounting orientation information in Instruction Manual" or equivalent.
- *9. For CNL models, "WARNING: Use conductors with insulation rated for at least 90°C".

The following markings shall be shipped separately with the device, on the smallest unit container or carton, or in the instruction manual in the smallest unit container or carton. In addition, the device shall be marked on the device with a reference to the information:

1. Marking for proper connections at wiring terminals.
2. Wire type of field installed conductor, Copper conductors only.
3. For models without suffix "/E", tightening torque for field wiring terminals, 14.2 lb-in. and 1.6 N·m.
4. The output derating curve, related to the surrounding air temperature and mounting direction.
5. "For use in Pollution Degree 2 Environment".

The following markings shall be shipped separately with the device.

- *1. **The ratings of overcurrent protection, the type of overcurrent protection and the coordination of the conductor sizes with overcurrent protection for the power output circuit. If cUL Listed fuse or UL Listed with CSA certified fuse is used as overcurrent protection, "type" may be represented by the Class.**