

## **DUAL SELECTABLE AC INPUT AC-DC 19" COMPATIBLE DOUBLE & EXTENDED EUROCARD 400 WATTS MULTIPLE OUTPUT SWITCHING MODE POWER SUPPLIES HSU393 SERIES**



### **FEATURES:**

- DUAL INPUT RANGE USER SELECTABLE
- 19" COMPATIBLE EUROCARD FORMAT
- DUAL CONVERTER ARCHITECTURE FOR HEPTAD OUTPUT
- MEET THE SAFETY STANDARDS
- EMI MEET CISPR PUB. 22 & FCC CLASS A
- CE MARKING COMPLIANCE
- 6U X 12HP X 280MM DOUBLE EUROCARD FOR EXTENDED MULTibus

### **SPECIFICATION**

#### **INPUT SPECIFICATION**

**Input Voltage:** 115Vac/230Vac dual selectable.  
**Input Connector:** DIN 41612 at rear or IEC320 AC receptacle for HSU393-J.  
**Input Frequency:** 47-63Hz  
**Inrush Current:** Typ. 40A @230Vac.  
**Input Current:** Typ. 6.0A@115Vac/2.5A@230Vac.  
**Dielectric Withstand:** Meet IEC950.  
**EMI:** Meet CISPR PUB. 22 & FCC Class A.  
**Power Fail Signal:** Installed.  
**Remote (Logic) Inhibit:** Available.  
**Hold-up Time:** Typ. 6-8mS @115Vac/10-12mS@230Vac.  
**Earth leakage:** Typ. 0.3mA @230Vac.  
**Overload Protection (OLP):** Fully protected against output overload and short circuit. Consult the factory for OLP setting.

#### **OUTPUT SPECIFICATION**

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** Typ. 400 Watts continuous.  
**Output Connection:** DIN 41612 at rear.  
**Line Regulation:** Typ. 0.1%.  
**Load Regulation:**

|                                |                                |
|--------------------------------|--------------------------------|
| HSU393-Q:                      | HSU393-J                       |
| Main VO1 typ. $\pm 1-2.0\%$    | Main VO1 typ. $\pm 1-2.0\%$    |
| Aux. VO2 typ. $\pm 2.0\%$ (MA) | Aux. VO2 typ. $\pm 2.0\%$ (MA) |
| Aux. VO3 typ. $\pm 2.0\%$ (MA) | Main VO3 typ. $\pm 1-2.0\%$    |
| Aux. VO4 typ. $\pm 3.0\%$ (PR) | Aux. VO4 typ. $\pm 2.0\%$ (MA) |
|                                | Aux. VO5 typ. $\pm 2.0\%$ (MA) |
|                                | Aux. VO6 typ. $\pm 3.0\%$ (PR) |
|                                | Aux. VO7 typ. $\pm 3.0\%$ (PR) |

**Noise & Ripple:** Typ. 1% peak to peak.  
**OVP:** Built-in at main VO1 (latch).  
**Adjustability:** Available at main output VO1 and Aux. output VO2 (Mag. Amp.).  
**Remote Sense:** Installed at main VO1.  
**Output LED Indicator:** Installed.

#### **GENERAL SPECIFICATION**

**Efficiency:** Typ. 74-77.0%.  
**Switching Frequency:** Typ. 65-70K Hz.  
**Circuit Topology:** Forward circuit.  
**Transient Response:** Typ. 3mS following a 25% load change.  
**Safety Standard:** IEC950/UL1950 Class I.  
**Power Density:** 1.46 Watt / Cubic Inch.

**Operating Temperature:** 0 to +50°C at full load. Derates linearly to +70°C at half load.  
**Storage Temperature:** -20 to +85°C.  
**Temperature Coefficient:** Typ. 0.04%/°C.  
**Cooling:** Forced air flow is recommended for Ta > +50°C full load operation.  
**Construction format:** 12HP(TE)x6Ux280mm. 19" compatible double Eurocard & extended MULTibus format.

Note: All measurements are at nominal input, full load, and +25°C unless otherwise specified.

# OUTPUT VOLTAGE/CURRENT RATINGS CHART

03/14/2002

## QUAD OUTPUT

| MODEL NO.                     | MAIN VO1 ★@# |       | AUX. VO2 @▲# |       | AUX. VO3 @▲# |       | AUX. VO4 # |       |
|-------------------------------|--------------|-------|--------------|-------|--------------|-------|------------|-------|
|                               | Typ.         | Volt. | Typ.         | Volt. | Typ.         | Volt. | Typ.       | Volt. |
| HSU393-Q050KKE<br>(HSU393-41) | 60.0A        | +5.0V | 3.0A         | 15.0V | 1.5A         | 15.0V | 5.0A       | 5.0V  |
| HSU393-Q050MII                | 60.0A        | +5.0V | 2.5A         | 24.0V | 2.0A         | 12.0V | 1.0A       | 12.0V |
| HSU393-Q050DII                | 60.0A        | +5.0V | 15.0A        | 3.3V  | 2.0A         | 12.0V | 1.0A       | 12.0V |
| HSU393-Q050DMI                | 60.0A        | +5.0V | 15.0A        | 3.3V  | 1.0A         | 24.0V | 1.0A       | 12.0V |
| HSU393-Q033EII                | 60.0A        | +3.3V | 15.0A        | 5.0V  | 2.0A         | 12.0V | 1.0A       | 12.0V |

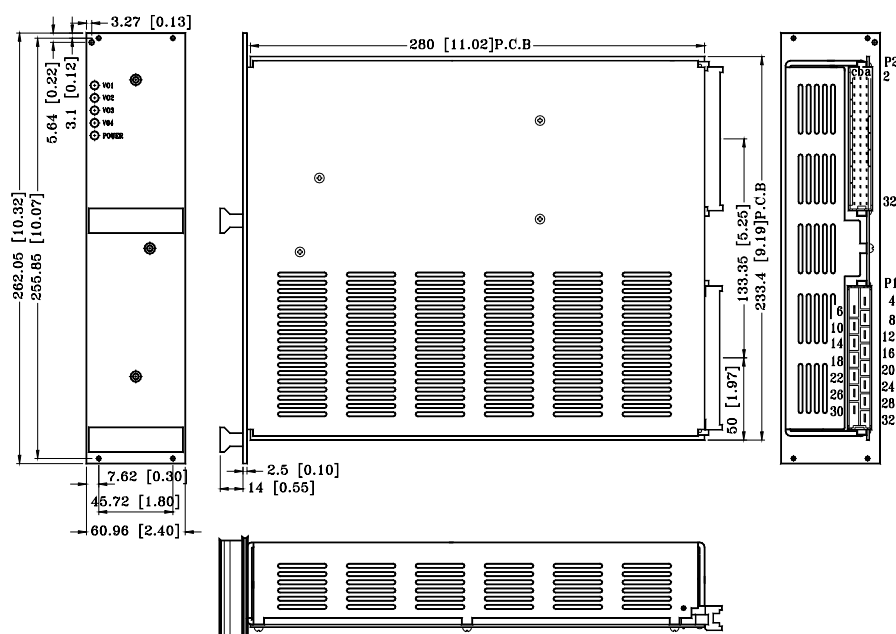
## HEPTAD OUTPUT

| MODEL NO.         | MAIN VO1 ★@# |       | AUX. VO2★@▲# |       | Main VO3★@# |       | AUX. VO4★@▲ |       | AUX. VO5★@▲ |       | AUX. VO6 ● |       | AUX. VO7 ● |       |
|-------------------|--------------|-------|--------------|-------|-------------|-------|-------------|-------|-------------|-------|------------|-------|------------|-------|
|                   | Typ.         | Volt. | Typ.         | Volt. | Typ.        | Volt. | Typ.        | Volt. | Typ.        | Volt. | Typ.       | Volt. | Typ.       | Volt. |
| HSU393-J050EEEHKK | 45.0A        | 5.0V  | 10.0A        | 5.0V  | 10.0A       | 5.0V  | 4.0A        | 5.0V  | 3.0A        | 10.0V | 1.0A       | 15.0V | 0.5A       | 15.0V |
| HSU393-J050IDEIKK | 45.0A        | 5.0V  | 4.0A         | 12.0V | 12.0A       | 3.3V  | 4.0A        | 5.0V  | 3.0A        | 12.0V | 1.0A       | 15.0V | 0.5A       | 15.0V |

Symbol: "★" OVP built-in. "@@#" Adjustable. "#" Remote sensing. "▲" Magnetic Amplifier. "●" Installed with Post Regulator.

## MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: HSU393-Q 2.52kg (5.56 lb.)  
HSU393-J 3.20kg (7.05lb.)



## PIN ASSIGNMENT

| ASSIGNMENT     | PIN NO.       |
|----------------|---------------|
| AC-L           | P1-28         |
| AC-N           | P1-30         |
| AC-G           | P1-32         |
| VO1(+)         | P1-4,6,8      |
| VO1(-)         | P1-10,12,14   |
| VO2(+)         | P1-20         |
| VO2(-)         | P1-22         |
| VO3(+)         | P1-16         |
| VO3(-)         | P1-18         |
| VO4(+)         | P1-24         |
| VO4(-)         | P1-26         |
| VO1(+Sense)    | P2-29a        |
| VO1(-Sense)    | P2-30a        |
| VO2(+Sense)    | P2-25a,P2-25b |
| VO2(-Sense)    | P2-26a        |
| VO3(+Sense)    | P2-27a,P2-27b |
| VO3(-Sense)    | P2-28a,P2-28b |
| VO4(+Sense)    | P2-31a        |
| VO4(-Sense)    | P2-32a,P2-32b |
| Power Fail (E) | P2-1a,P2-1b   |
| Power Fail (C) | P2-2a         |

Mating connector: DIN 41612-H15 Female

HSU393-Q

## PIN ASSIGNMENT

| ASSIGNMENT  | PIN NO.                        |
|-------------|--------------------------------|
| I/PAC-L     | P1-L                           |
| I/PAC-N     | P1-N                           |
| I/PAC-G     | P1-G                           |
| O/PAC-L     | P2-L                           |
| O/PAC-N     | P2-N                           |
| O/PAC-G     | P2-G                           |
| VO1(+)      | P3-20,22,24,26,28,30,32(D,B,Z) |
| DC COM      | P3-2,4,6,8,10,12,14,16(D,B,Z)  |
| VO1(+Sense) | P3-18D                         |
| VO1(-Sense) | P3-18B                         |
| VO2(+)      | P4-6,8,10(D,B,Z)               |
| DC COM      | P4-2,4,22,30,32(D,B,Z)         |
| VO2(+Sense) | P4-10Z                         |
| VO2(-Sense) | P4-12D                         |
| VO3         | P4-26,28(D,B,Z)                |
| VO3(+Sense) | P4-24Z                         |
| VO3(-Sense) | P4-24B                         |
| VO4         | P4-16B,P4-16Z                  |
| VO5         | P4-12B,P4-12Z                  |
| VO6         | P4-18B,P4-18Z                  |
| VO7         | P4-20B,P4-20Z                  |
| INH.        | P4-14D                         |
| PF          | P4-20D                         |

HSU393-J