

## **DUAL SELECTABLE AC INPUT AC-DC 19" COMPATIBLE EUROCARD MULTI-OUTPUT 45-100 WATTS SWITCHING MODE POWER SUPPLIES HSU45, HSU60 & HSU100 SERIES**



### **FEATURES:**

- DUAL INPUT RANGE USER SELECTABLE
- 19" COMPATIBLE EUROCARD FORMAT
- MEET THE SAFETY STANDARDS
- EMI MEET CISPR PUB. 22 & FCC CLASS B
- CE MARKING COMPLIANCE
- HSU45 3UX6HPX160MM VMEbus STANDARD  
HSU60 3UX8HPX160MM VMEbus STANDARD  
HSU100 3UX10HPX160MM VMEbus STANDARD

### **SPECIFICATION**

#### **INPUT SPECIFICATION**

**Input Voltage:** 115Vac/230Vac dual selectable.  
**Input Connector:** DIN 41612 at rear.  
**Input Frequency:** 47-63Hz.  
**Inrush Current:** Typ. 25A @230Vac.  
**Input Current:** HSU45 0.88A@115Vac/0.44A@230Vac.  
   Use T2.0A/250Vac fuse.  
   HSU60 1.2A@115Vac/0.7A@230Vac.  
   Use T2.5A/250Vac fuse.  
   HSU100 2.2A@115Vac/1.2A@230Vac.  
   Use T3.15A/250Vac fuse.  
**Dielectric Withstand:** Meet IEC 60950-1.  
**EMI:** Meet CISPR PUB. 22 & FCC Class B.  
**Power Fail Signal:** Installed.  
**Remote (Logic) Inhibit:** Available.  
**Hold-up Time:** Typ. 20mS @115Vac/50mS @230Vac.  
**Earth leakage:** Typ. 0.3mA @230Vac.

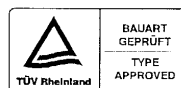
#### **OUTPUT SPECIFICATION**

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** Typ. 45 Watts for HSU45.  
   Typ. 60 Watts for HSU60.  
   Typ. 100 Watts for HSU100.  
**Output Connector:** DIN 41612 at rear.  
**Line Regulation:** Typ. 0.4%.  
**Load Regulation:** Main VO1 typ.  $\pm 1.0\%$ .  
   Aux. VO2 typ.  $\pm 2-3.0\%$  (PR).  
    $\pm 2.0\%$  (Mag. Amp.)  
   Aux. VO3 typ.  $\pm 2-3.0\%$  (PR).  
   Aux. VO4 typ.  $\pm 2-3.0\%$  (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 in main VO1.  
**Overload Protection (OLP):** Fully protected against  
   output overload and short circuit.  
   Consult the factory for OLP setting.

#### **GENERAL SPECIFICATION**

**Efficiency:** Typ. 70-75%.  
**Switching Frequency:** Typ. 100K Hz.  
**Circuit Topology:** Forward circuit.  
**Transient Response:** Typ. 3mS following a 25% load-change.  
**Safety Standard:** IEC 60950-1/UL 60950-1 Class I.  
**Power Density:** 1.4 Watts / Cubic Inch for HSU45 & HSU60.  
   1.9 Watts / Cubic Inch for HSU100.  
**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:** Free air convection cooling.  
**Construction format:** 6,8,10HP(TE) X 3U X 160mm  
   19" compatible Eurocard VMEbus standard.

Note: Due to requests in market and advances in technology, specifications subject to change without notification.



For the details of safety approval, please consult the factory.

# OUTPUT VOLTAGE / CURRENT RATINGS CHART

## HSU45 Series

### SINGLE OUTPUT

MODEL NO.	MAIN VO1 ★@#	
	Typ.	Volt.
HSU45-10/(E)	9.0A	5.0V
HSU45-11	4.0A	12.0V
HSU45-11/(E)	3.7A	12.0V
HSU45-12/(E)	3.0A	15.0V
HSU45-13/(E)	2.0A	24.0V

(E) With gas-tube for safety purpose.

### DUAL OUTPUT

MODEL NO.	MAIN VO1 ★@#		AUX. VO2 ◇●	
	Typ.	Volt.	Typ.	Volt.
HSU45-20	4.0A	5.0V	2.0A	12.0V
HSU45-21	2.0A	12.0V	1.5A	12.0V
HSU45-22	4.0A	5.0V	1.2A	15.0V
HSU45-23	1.5A	15.0V	1.5A	15.0V
HSU45-24	4.0A	5.0V	1.0A	24.0V
HSU45-25	1.0A	24.0V	1.0A	24.0V

### TRIPLE OUTPUT

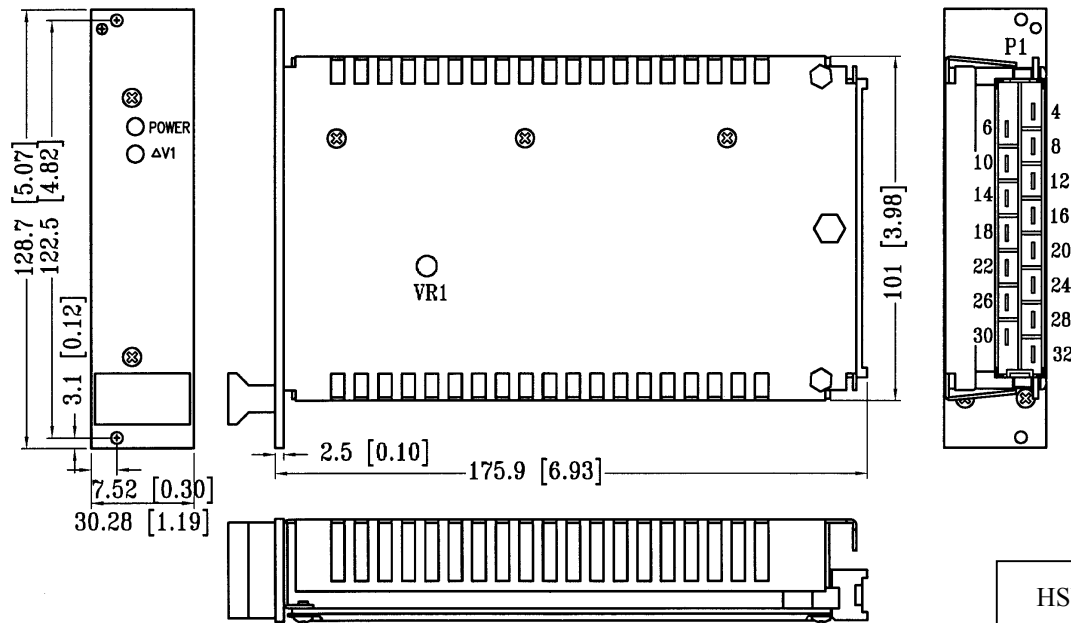
MODEL NO.	MAIN VO1 ★@#		AUX. VO2 ◇●		AUX. VO3 ◇●	
	Typ.	Volt.	Typ.	Volt.	Typ.	Volt.
HSU45-30	3.0A	5.0V	2.0A	12.0V	0.5A	5.0V
HSU45-31	3.0A	5.0V	2.0A	15.0V	0.5A	15.0V
HSU45-32	3.0A	5.0V	2.0A	12.0V	0.5A	12.0V
HSU45-33	3.0A	5.0V	1.0A	24.0V	0.5A	12.0V

Symbol: "★" OVP built-in. "@#" Adjustable. "#" Remote sensing. "▲" Magnetic Amplifier.

"●" Installed with Post Regulator. "◇" Floating ( or isolated) output.

**MECHANICAL DIMENSIONS: MM [INCHES]**

**WEIGHT: HSU45 537.0g (18.94 Oz.)**



### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENTS

ASSIGNMENT	AC INPUT			SINGLE/DUAL/TRIPLE OUTPUT						ASSORTED SIGNAL				
	AC-L	AC-N	AC-G	+VO1	-VO1	+VO2	-VO2	+VO3	-VO3	NC	LOG. INH.	+S	-S	POWER FAIL
HSU45-1X	28	30	32	4,6	12,14	-	-	-	-	16,18,24,26	20	8	10	22
HSU45-2X	28	30	32	4	6	8	10	-	-	12,14,16,18,24,26	20	-	-	22
HSU45-3X	28	30	32	4,6,	8,10	12	14	16	18	24,26	20	-	-	22

Mating connector: DIN41612-H15 Female

# OUTPUT VOLTAGE / CURRENT RATINGS CHART

## HSU60 Series

### SINGLE OUTPUT

MODEL NO.	MAIN VO1 ★@#	
	Typ.	Volt.
HSU60-10	12.0A	5.0V
HSU60-10B1	10.0A	6.0V
HSU60-11	5.0A	12.0V
HSU60-12	4.0A	15.0V
HSU60-13	2.5A	24.0V
HSU60-15	3.0A	19.0V

### DUAL OUTPUT

MODEL NO.	MAIN VO1 ★@#		AUX. VO2 ◇▲	
	Typ.	Volt.	Typ.	Volt.
HSU60-20	5.0A	5.0V	3.0A	12.0V
HSU60-21	2.5A	12.0V	2.5A	12.0V
HSU60-22	5.0A	5.0V	2.5A	15.0V
HSU60-23	2.0A	15.0V	2.0A	15.0V
HSU60-24	5.0A	5.0V	1.5A	24.0V
HSU60-25	1.4A	24.0V	1.4A	24.0V

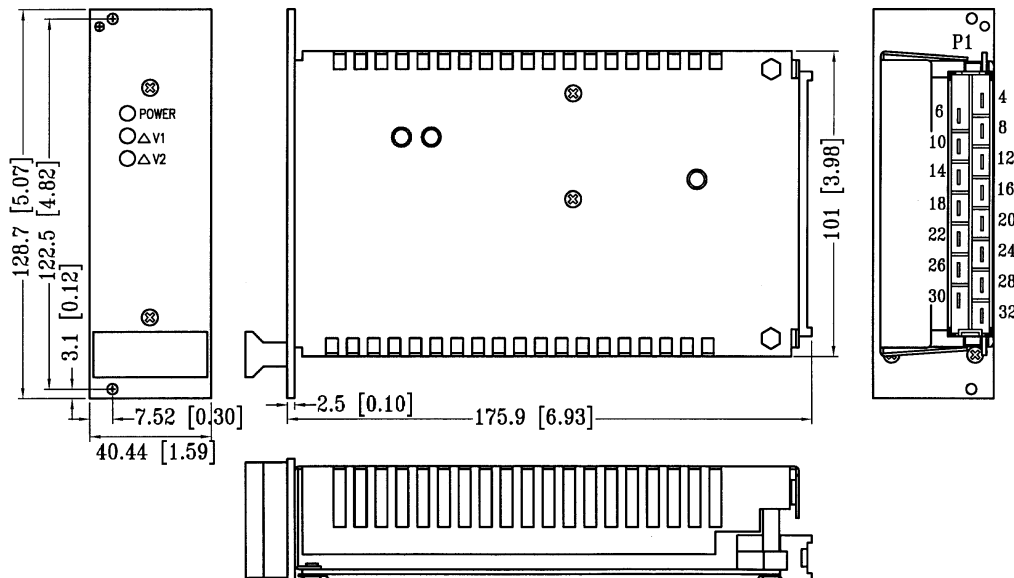
### TRIPLE OUTPUT

MODEL NO.	MAIN VO1 ★@#		AUX. VO2 ◇▲		AUX. VO3 ◇●	
	Typ.	Volt.	Typ.	Volt.	Typ.	Volt.
HSU60-30	5.0A	5.0V	2.5A	12.0V	1.0A	5.0V
HSU60-31	5.0A	5.0V	2.0A	12.0V	0.5A	15.0V
HSU60-32	5.0A	5.0V	2.5A	12.0V	0.5A	12.0V
HSU60-33	5.0A	5.0V	1.5A	24.0V	0.5A	12.0V

Symbol: "★" OVP built-in. "@# Adjustable. "# Remote sensing. "▲" Magnetic Amplifier.  
 "●" Installed with Post Regulator. "◇" Floating(or isolated) output.

**MECHANICAL DIMENSIONS: MM [INCHES]**

**WEIGHT: HSU60 707.0g (24.94 Oz.)**



HSU605

### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENTS

ASSIGNMENT	AC INPUT			SINGLE/DUAL/TRIPLE OUTPUT							ASSORTED SIGNAL			
	AC-L	AC-N	AC-G	+VO1	-VO1	+VO2	-VO2	+VO3	-VO3	NC	LOG. INH.	+S	-S	POWER FAIL
HSU60-1X	28	30	32	4,6	12,14	-	-	-	-	16,18,24,26	20	8	10	22
HSU60-2X	28	30	32	4	6	8	10	-	-	12,14,16,18,24,26	20	-	-	22
HSU60-3X	28	30	32	4,6,	8,10	12	14	16	18	24,26	20	-	-	22

Mating connector: DIN41612-H15 Female

# OUTPUT VOLTAGE / CURRENT RATINGS CHART

## HSU100 Series

### SINGLE OUTPUT

MODEL NO.	MAIN VO1 ★@# Typ. Volt.
HSU100-10	20.0A 5.0V
HSU100-11	8.0A 12.0V
HSU100-12	7.0A 15.0V
HSU100-13	4.2A 24.0V
HSU100-16	3.6A 28.0V
HSU100-18	2.0A 48.0V

### DUAL OUTPUT

MODEL NO.	MAIN VO1 ★@# Typ. Volt.	AUX. VO2 ◇▲ Typ. Volt.
HSU100-20	8.0A 5.0V	5.0A 12.0V
HSU100-21	4.2A 12.0V	4.2A 12.0V
HSU100-22	8.0A 5.0V	4.0A 15.0V
HSU100-23	3.4A 15.0V	3.4A 15.0V
HSU100-24	8.0A 5.0V	2.5A 24.0V
HSU100-25	2.1A 24.0V	2.1A 24.0V
HSU100-26E	8.0A 12.0V	0.5A 24.0V

### TRIPLE OUTPUT

MODEL NO.	MAIN VO1 ★@# Typ. Volt.	AUX. VO2 ◇▲ Typ. Volt.	AUX. VO3 ◇● Typ. Volt.
HSU100-30	7.0A 5.0V	5.0A 12.0V	1.0A 5.0V
HSU100-31	6.0A 5.0V	4.0A 15.0V	0.6A 15.0V
HSU100-32	7.0A 5.0V	5.0A 12.0V	0.5A 12.0V
HSU100-33	7.0A 5.0V	2.5A 24.0V	0.5A 12.0V

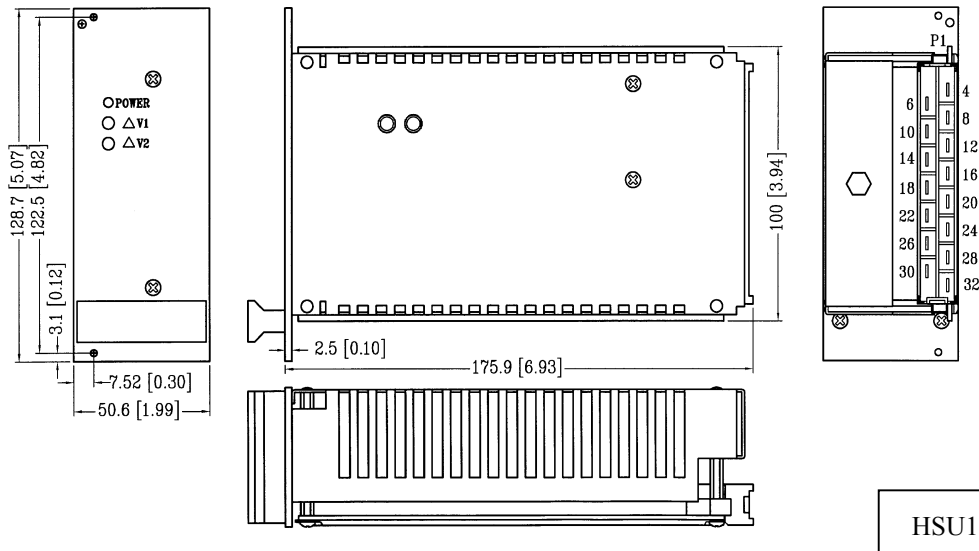
### QUAD OUTPUT

MODEL NO.	MAIN VO1 ★@# Typ. Volt.	AUX. VO2 ■† Typ. Volt.	AUX. VO3 ◇● Typ. Volt.	AUX. VO4 ◇● Typ. Volt.
HSU100-48	4.0A 12.0V	2.0A 24.0V	0.5A 12.0V	0.5A 12.0V
HSU100-Q050MII	10.0A 5.0V	1.0A 24.0V	1.0A 12.0V	1.0A 12.0V
HSU100-Q050QII	10.0A 5.0V	1.0A 48.0V	0.5A 12.0V	0.5A 12.0V

Symbol: "★" OVP built-in. "@#" Adjustable. "#" Remote sensing. "▲" Magnetic Amplifier. "●" Installed with Post Regulator.  
 "†" Stacked on main output. "◇" Floating(or isolated) output. "■" Couple common choke.

**MECHANICAL DIMENSIONS: MM [INCHES]**

**WEIGHT: HSU100 943.0g (33.26 Oz.)**



HSU100

### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENTS

ASSIGNMENT	AC INPUT			SINGLE/DUAL/TRIPLE/QUAD OUTPUT									ASSORTED SIGNAL			
	AC-L	AC-N	AC-G	+VO1	-VO1	+VO2	-VO2	+VO3	-VO3	+VO4	-VO4	NC	LOG. INH.	+S	-S	POWER FAIL
HSU100-1X	28	30	32	4,6	12,14	-	-	-	-	-	-	16,18,24,26	20	8	10	22
HSU100-2X	28	30	32	4	6	8	10	-	-	-	-	12,14,16,18,24,26	20	-	-	22
HSU100-3X	28	30	32	4,6	8,10	12	14	16	18	-	-	24,26	20	-	-	22
HSU100-4X	28	30	32	4	-	10	-	12	14	16	18	6,8,20,22,24	-	-	-	-

Mating connector: DIN41612-H15 Female