

# HiTRON

## ***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.

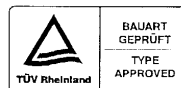
#### **OUTPUT SPECIFICATION**

**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

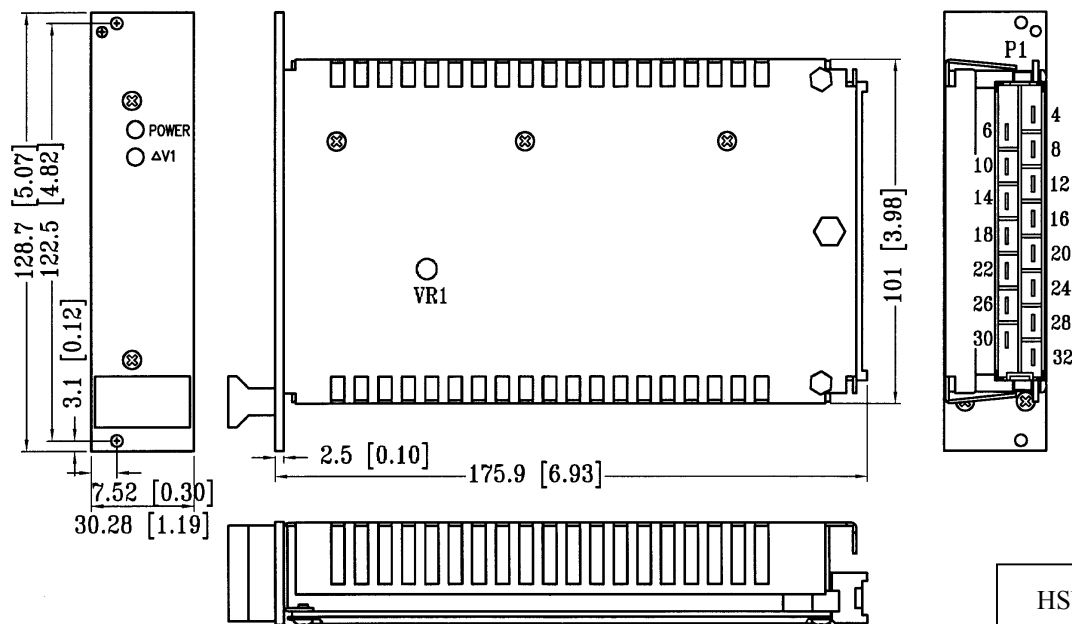
| MODEL NO. | MAIN VO1 ★@# |       | AUX. VO2 ◇● |       | AUX. VO3 ◇● |       |
|-----------|--------------|-------|-------------|-------|-------------|-------|
|           | Typ.         | Volt. | Typ.        | Volt. | Typ.        | Volt. |
| HSU45-30  | 3.0A         | 5.0V  | 2.0A        | 12.0V | 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 |

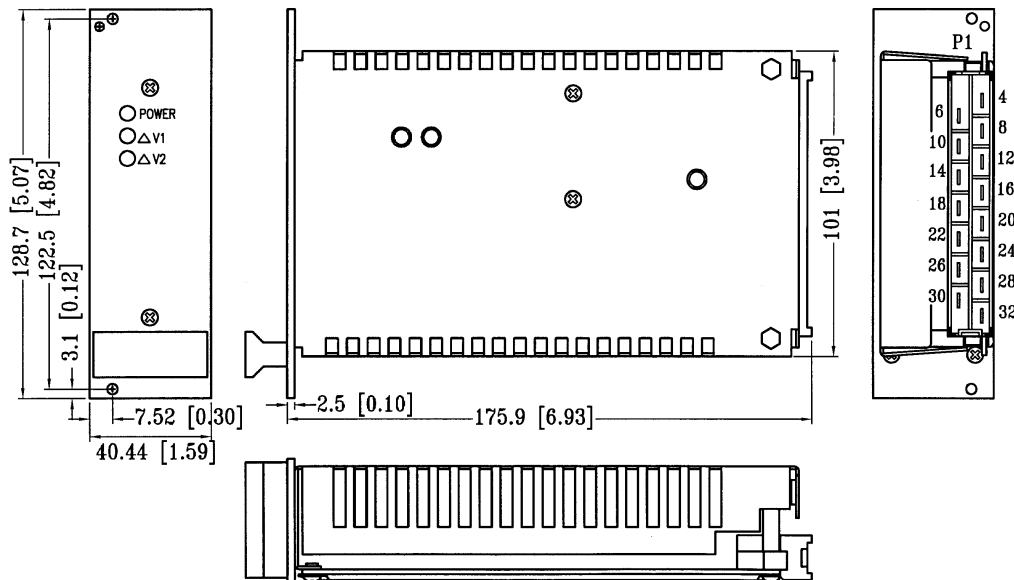
### TRIPLE OUTPUT

| 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 ★@#<br>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 ★@#<br>Typ. Volt. | AUX. VO2 ◇▲<br>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 ★@#<br>Typ. Volt. | AUX. VO2 ◇▲<br>Typ. Volt. | AUX. VO3 ◇●<br>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                |

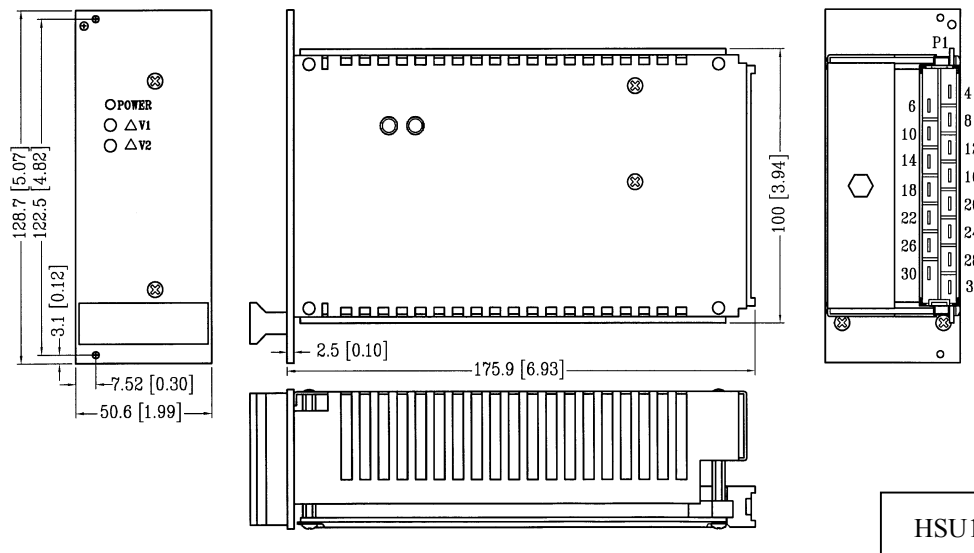
### QUAD OUTPUT

| MODEL NO.      | MAIN VO1 ★@#<br>Typ. Volt. | AUX. VO2 ■†<br>Typ. Volt. | AUX. VO3 ◇●<br>Typ. Volt. | AUX. VO4 ◇●<br>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.)



### 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