

# TOTAL POWER INT'L

## DC-DC CONVERTER 19" COMPATIBLE EUROCARD MULTIPLE OUTPUT 45-100 WATTS SWITCHING MODE POWER SUPPLIES HDU45, HDU60 & HDU100 SERIES



### FEATURES:

- 12/24/48VDC INPUT RANGE
- 19" COMPATIBLE EUROCARD FORMAT
- EMI MEET CISPR PUB. 22 & FCC CLASS B
- MEET THE SAFETY STANDARDS
- CE MARKING COMPLIANCE
- HDU45 3UX6HPX160MM VMEbus STANDARD
- HDU60 3UX8HPX160MM VMEbus STANDARD
- HDU100 3UX10HPX160MM VMEbus STANDARD

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Three ranges option.

A Range: 9-18Vdc nominal 12Vdc.

B Range: 18-36Vdc nominal 24Vdc.

C Range: 36-72Vdc nominal 48Vdc.

**Input Connector:** DIN 41612 at rear.

**Input Current:**

HDU45-A: 8.0A, HDU45-B: 4.0A, HDU45-C: 2.5A.

HDU60-A: 10.0A, HDU60-B: 5.0A, HDU60-C: 3.15A.

HDU100-A: 15.0A, HDU100-B: 6.3A, HDU100-C: 4.0A.

**Dielectric Withstand:** Meet IEC950.

**EMI:** Meet CISPR PUB. 22 & FCC Class B.

**Power Fail Signal:** Installed.

**Remote (Logic) Inhibit:** Installed.

**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. 45 Watts for HDU45.

Typ. 60 Watts for HDU60.

Typ. 100 Watts for HDU100.

**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:** Available at HDU60 & 100 single O/P.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 70.0-75.0%

**Switching Frequency:** Typ. 100K Hz.

**Circuit Topology:** Forward circuit.

**Transient Response:** Typ. 3mS following a 25% load change.

**Power Density:** 1.4 Watts / Cubic Inch for HDU45, HDU60.  
1.9 Watts /Cubic Inch for HDU100.

**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.

**Construction:** 6,8,10 HP(TE)x3Ux160mm 19" compatible Eurocard VMEbus standard.

# OUTPUT VOLTAGE/CURRENT RATINGS CHART

## HDU45 Series

### SINGLE OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@◇	
		Typ.	Volt.
HDU45-A or B or C-S033	A: 9-18,B: 18-36,C: 36-72	10.0A	3.3V
HDU45-A or B or C-10	A: 9-18,B: 18-36,C: 36-72	9.0A	5.0V
HDU45-A or B or C-11	A: 9-18,B: 18-36,C: 36-72	4.0A	12.0V
HDU45-A or B or C-12	A: 9-18,B: 18-36,C: 36-72	3.0A	15.0V
HDU45-A or B or C-13	A: 9-18,B: 18-36,C: 36-72	2.0A	24.0V

### DUAL OUTPUT

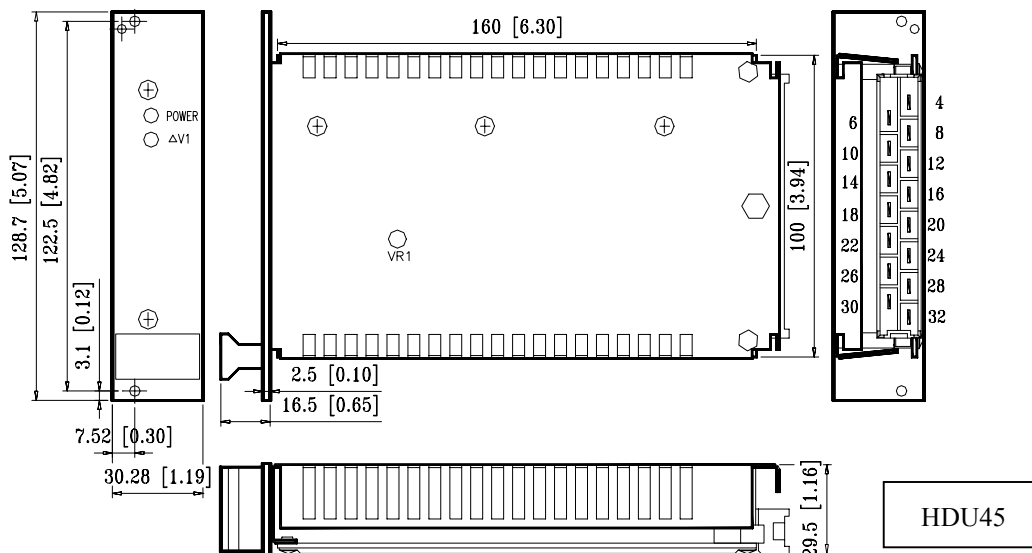
MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@◇		OUTPUT VO2 ◆◇■	
		Typ.	Volt.	Typ.	Volt.
HDU45-A or B or C-D033E	A: 9-18,B: 18-36,C: 36-72	5.0A	3.3V	4.0A	5.0V
HDU45-A or B or C-D033I	A: 9-18,B: 18-36,C: 36-72	5.0A	3.3V	2.0A	12.0V
HDU45-A or B or C-20	A: 9-18,B: 18-36,C: 36-72	4.0A	5.0V	2.0A	12.0V
HDU45-A or B or C-21	A: 9-18,B: 18-36,C: 36-72	2.0A	12.0V	2.0A	12.0V
HDU45-A or B or C-23	A: 9-18,B: 18-36,C: 36-72	1.5A	15.0V	1.5A	15.0V
HDU45-A or B or C-24	A: 9-18,B: 18-36,C: 36-72	4.0A	5.0V	1.0A	24.0V
HDU45-A or B or C-25	A: 9-18,B: 18-36,C: 36-72	1.0A	24.0V	1.0A	24.0V

### TRIPLE OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@◇		OUTPUT VO2 ◆◇■		OUTPUT VO3 ◆◇■	
		Typ.	Volt.	Typ.	Volt.	Typ.	Volt.
HDU45-A or B or C-T033EI	A: 9-18,B: 18-36,C: 36-72	5.0A	3.3V	4.0A	5.0V	0.50A	12.0V
HDU45-A or B or C-T033IM	A: 9-18,B: 18-36,C: 36-72	5.0A	3.3V	2.0A	12.0V	0.25A	24.0V
HDU45-A or B or C-30	A: 9-18,B: 18-36,C: 36-72	3.0A	5.0V	2.0A	12.0V	0.50A	5.0V
HDU45-A or B or C-31	A: 9-18,B: 18-36,C: 36-72	3.0A	5.0V	2.0A	15.0V	0.50A	15.0V
HDU45-A or B or C-32	A: 9-18,B: 18-36,C: 36-72	3.0A	5.0V	2.0A	12.0V	0.50A	12.0V
HDU45-A or B or C-33	A: 9-18,B: 18-36,C: 36-72	3.0A	5.0V	1.0A	24.0V	0.50A	12.0V

Symbol: "★"OVP built-in. "@Adjustable. "●" Installed with Post Regulator. "■" Couple filter inductor. "◇" Floating ( or isolated) output.

**MECHANICAL DIMENSIONS: MM [INCHES]      WEIGHT: HDU45 537.0g (18.94 Oz.)**



### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENTS

ASSIGNMENT	DC INPUT			SINGLE/DUAL/TRIPLE OUTPUT							ASSORTED SIGNAL			
	+Vin	-Vin	G	+VO1	-VO1	+VO2	-VO2	+VO3	-VO3	NC	LOG. INH.	+S	-S	POWER FAIL
HDU45-1X	28	30	32	4,6	12,14	-	-	-	-	16,18,24,26	20	8	10	22
HDU45-2X	28	30	32	4	6	8	10	-	-	12,14,16,18,24,26	20	-	-	22
HDU45-3X	28	30	32	4,6,	8,10	12	14	16	18	24,26	20	-	-	22

Mating connector: DIN41612-H15 Female

TOTAL POWER INT'L Tel: 877-646-0900 Fax: 978-453-7395

Email: sales@total-power.com http://www.total-power.com

# OUTPUT VOLTAGE/CURRENT RATINGS CHART

## HDU60 Series

### SINGLE OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@#◇	
		Typ.	Volt.
HDU60-A or B or C-S033	A: 9-18,B: 18-36,C: 36-72	16.0A	3.3V
HDU60-A or B or C-10	A: 9-18,B: 18-36,C: 36-72	12.0A	5.0V
HDU60-A or B or C-11	A: 9-18,B: 18-36,C: 36-72	5.0A	12.0V
HDU60-A or B or C-12	A: 9-18,B: 18-36,C: 36-72	4.0A	15.0V
HDU60-A or B or C-13	A: 9-18,B: 18-36,C: 36-72	2.5A	24.0V

### DUAL OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@◇		OUTPUT VO2 ▲◇@	
		Typ.	Volt.	Typ.	Volt.
HDU60-A or B or C-D033E	A: 9-18,B: 18-36,C: 36-72	6.0A	3.3V	5.0A	5.0V
HDU60-A or B or C-D033I	A: 9-18,B: 18-36,C: 36-72	6.0A	3.3V	3.0A	12.0V
HDU60-A or B or C-20	A: 9-18,B: 18-36,C: 36-72	5.0A	5.0V	3.0A	12.0V
HDU60-A or B or C-21	A: 9-18,B: 18-36,C: 36-72	2.5A	12.0V	2.5A	12.0V
HDU60-A or B or C-23	A: 9-18,B: 18-36,C: 36-72	2.0A	15.0V	2.0A	15.0V
HDU60-A or B or C-24	A: 9-18,B: 18-36,C: 36-72	5.0A	5.0V	1.5A	24.0V
HDU60-A or B or C-25	A: 9-18,B: 18-36,C: 36-72	1.3A	24.0V	1.3A	24.0V

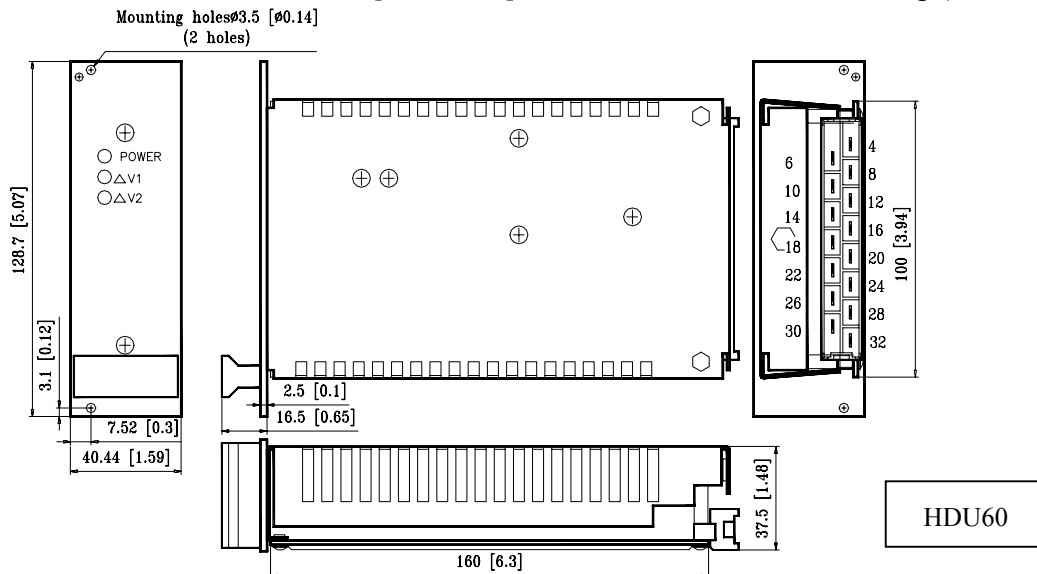
### TRIPLE OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@◇		OUTPUT VO2 ▲◇@		OUTPUT VO3 ●◇■	
		Typ.	Volt.	Typ.	Volt.	Typ.	Volt.
HDU60-A or B or C-T033EI	A: 9-18,B: 18-36,C: 36-72	6.0A	3.3V	5.0A	5.0V	0.50A	12.0V
HDU60-A or B or C-T033IM	A: 9-18,B: 18-36,C: 36-72	6.0A	3.3V	2.5A	12.0V	0.25A	24.0V
HDU60-A or B or C-30	A: 9-18,B: 18-36,C: 36-72	5.0A	5.0V	2.5A	12.0V	1.00A	5.0V
HDU60-A or B or C-31	A: 9-18,B: 18-36,C: 36-72	4.5A	5.0V	2.0A	15.0V	0.50A	15.0V
HDU60-A or B or C-32	A: 9-18,B: 18-36,C: 36-72	5.0A	5.0V	2.5A	12.0V	0.50A	12.0V
HDU60-A or B or C-33	A: 9-18,B: 18-36,C: 36-72	5.0A	5.0V	1.3A	24.0V	0.50A	12.0V

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

### MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: HDU60 707.0g (24.94 Oz.)



### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENTS

ASSIGNMENT	DC INPUT			SINGLE/DUAL/TRIPLE OUTPUT							ASSORTED SIGNAL			
	+Vin	-Vin	G	+VO1	-VO1	+VO2	-VO2	+VO3	-VO3	NC	LOG. INH.	+S	-S	POWER FAIL
HDU60-1X	28	30	32	4,6	12,14	-	-	-	-	16,18,24,26	20	8	10	22
HDU60-2X	28	30	32	4	6	8	10	-	-	12,14,16,18,24,26	20	-	-	22
HDU60-3X	28	30	32	4,6	8,10	12	14	16	18	24,26	20	-	-	22

Mating connector: DIN41612-H15 Female

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# OUTPUT VOLTAGE/CURRENT RATINGS CHART

## HDU100 Series

### SINGLE OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@#◇	
		Typ.	Volt.
HDU100-A or B or C-S033	A: 9-18,B: 18-36,C: 36-72	25.0A	3.3V
HDU100-A or B or C-10	A: 9-18,B: 18-36,C: 36-72	20.0A	5.0V
HDU100-A or B or C-11	A: 9-18,B: 18-36,C: 36-72	8.5A	12.0V
HDU100-A or B or C-12	A: 9-18,B: 18-36,C: 36-72	7.0A	15.0V
HDU100-A or B or C-13	A: 9-18,B: 18-36,C: 36-72	4.5A	24.0V

### DUAL OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@◇		OUTPUT VO2 ▲◇	
		Typ.	Volt.	Typ.	Volt.
HDU100-A or B or C-D033E	A: 9-18,B: 18-36,C: 36-72	10.0A	3.3V	8.0A	5.0V
HDU100-A or B or C-D033I	A: 9-18,B: 18-36,C: 36-72	10.0A	3.3V	5.0A	12.0V
HDU100-A or B or C-20	A: 9-18,B: 18-36,C: 36-72	8.0A	5.0V	5.0A	12.0V
HDU100-A or B or C-21	A: 9-18,B: 18-36,C: 36-72	4.2A	12.0V	4.2A	12.0V
HDU100-A or B or C-23	A: 9-18,B: 18-36,C: 36-72	3.4A	15.0V	3.4A	15.0V
HDU100-A or B or C-24	A: 9-18,B: 18-36,C: 36-72	8.0A	5.0V	2.5A	24.0V
HDU100-A or B or C-25	A: 9-18,B: 18-36,C: 36-72	2.1A	24.0V	2.1A	24.0V

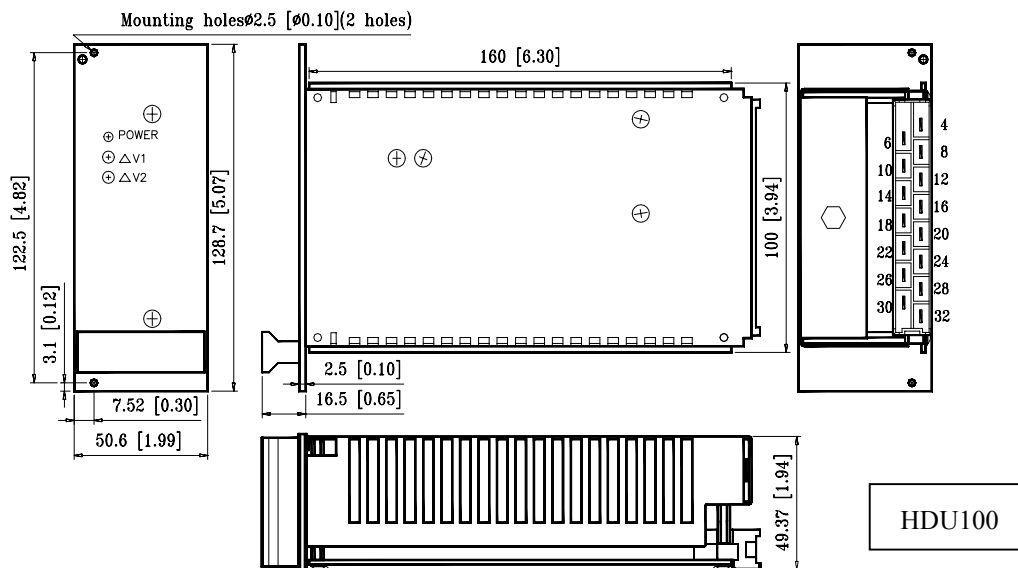
### TRIPLE OUTPUT

MODEL NO.	INPUT RANGE Vdc	OUTPUT VO1 ★@◇		OUTPUT VO2 ▲◇@		OUTPUT VO3 ◆◇■	
		Typ.	Volt.	Typ.	Volt.	Typ.	Volt.
HDU100-A or B or C-T033EI	A: 9-18,B: 18-36,C: 36-72	6.0A	3.3V	5.0A	5.0V	0.50A	12.0V
HDU100-A or B or C-T033IM	A: 9-18,B: 18-36,C: 36-72	6.0A	3.3V	2.5A	12.0V	0.25A	24.0V
HDU100-A or B or C-30	A: 9-18,B: 18-36,C: 36-72	7.0A	5.0V	5.0A	12.0V	1.00A	5.0V
HDU100-A or B or C-31	A: 9-18,B: 18-36,C: 36-72	6.0A	5.0V	4.0A	15.0V	0.60A	15.0V
HDU100-A or B or C-32	A: 9-18,B: 18-36,C: 36-72	7.0A	5.0V	5.0A	12.0V	0.50A	12.0V
HDU100-A or B or C-33	A: 9-18,B: 18-36,C: 36-72	7.0A	5.0V	2.5A	24.0V	0.50A	12.0V

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

## MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: HDU100 943.0g (33.26 Oz.)



## INPUT & OUTPUT CONNECTORS PIN ASSIGNMENTS

ASSIGNMENT	DC INPUT			SINGLE/DUAL/TRIPLE OUTPUT							ASSORTED SIGNAL			
	+Vin	-Vin	G	+VO1	-VO1	+VO2	-VO2	+VO3	-VO3	NC	LOG. INH.	+S	-S	POWER FAIL
HDU100-1X	28	30	32	4,6	12,14	-	-	-	-	16,18,24,26	20	8	10	22
HDU100-2X	28	30	32	4	6	8	10	-	-	12,14,16,18,24,26	20	-	-	22
HDU100-3X	28	30	32	4,6	8,10	12	14	16	18	24,26	20	-	-	22

Mating connector: DIN41612-H15 Female

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