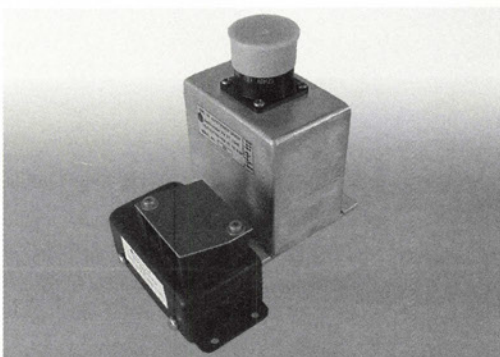




## TRANSFORMER RECTIFIER UNITS (TRU)

*For Military and Commercial Aircraft Application*



The Electrocube Model TR1010 family of TRUs converts aircraft primary AC power to 28 VDC power from a single phase, 115 volt, 400 Hz source.

These lightweight TRUs have been specifically designed for military and commercial aircraft applications. They meet all the exceptional reliability demands and environmental requirements of common commercial and military standards for airborne equipment. Hermetically sealed versions are available.

Electrocube's many years of experience manufacturing airborne components assures our designs provide the most lightweight product in the industry.

Cooling is provided by thermal conduction via the mounting base plate. No forced air cooling is necessary. The absence of blowers results in high reliability and absolutely maintenance-free operation ensuring a low unit life-cycle cost.

### **Standard Features:**

- Resistance (bonding resistance): <10 m Ohm
- MTBF: > 50.000 h

### **Applications:**

- Military aircraft
- Commercial aircraft

### **Output Current:**

- 3 to 20 Amps

### **Electrical Specifications (typical):**

#### **Input**

Rated Voltage.....	115/200 VAC, 1-ph
Rated Frequency.....	400 Hz and/or frequency wild
Voltage Spikes.....	MIL-STD-704 D
Voltage Transients.....	MIL-STD-704 D
Frequency Transients...	MIL-STD-704 D

#### **Output (3 Amp Design)**

Rated Voltage.....	28 VDC
Rated Power.....	84 W
Rated Current.....	3 A
Ripple (Rated Power).....	8%

Efficiency..... >86% (Rated Power)

Harmonic Content.....Max 5% of the Fundamental

### **Output Characteristic (typical):**

- a)  $U_E = 115 \text{ VAC}$  (Full Load),  
 $f_E = 400 \text{ Hz} \pm 7, 5\%/U_A = > 25.3 \text{ VDC}$
- b)  $U_E = 115 \text{ VAC}$  (No Load)  
 $f_E = 400 \text{ Hz} \pm 7.5\%/U_A = > 28 \text{ VDC}$
- other voltages available

### **Typical Physical Characteristics: (non-hermetic 3 Amp design)**

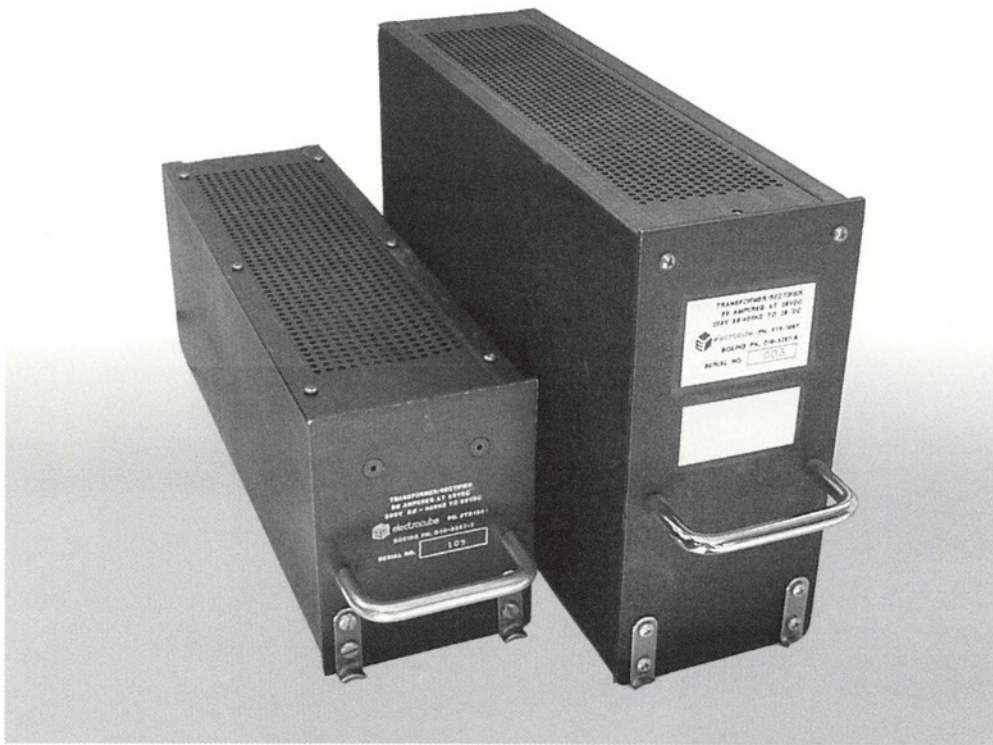
Dimensions.....	L = 3.90
	H = 2.56
	W = 1.94
Weight.....	1.2 lbs.

### **Environmental Specifications:**

Operating Temperature.....	-30° C to 102° C
Momentary: (Air and Mounting Plate Temperature)...	153° C for 2 min.
Storage Temperature.....	-60° C to 90° C
Vibration.....	Random, 22 G rms 10-2000 Hz IAW MIL-STD-810 C
Shock.....	40 g, 11 ms
Humidity.....	95% IAW RTCA/DO-160
Altitude.....	10 kPa
Dielectric Resistance.....	> 100 M Ohm

*Specifications subject to change without notice.*

# HIGH CURRENT TRANSFORMER RECTIFIER UNITS



Regulated or Unregulated – ElectroCUBE high current TRUs convert three-phase power to Mil-Std-704 quality DC power. Standard units operate within the most stringent environments and are designed to meet military standards for mission critical equipment.

Designs using ElectroCUBE's lightweight aluminum foil transformer technology offer the "lowest weight" product available.

Forced air, internal fan or natural free-air conduction models are available with nominal output current ratings from 20A to 500A.

Applications for TRUs include commercial and military aircraft: freighters to fighters, tankers to trainers, helicopters and ground base units.

## **Input Voltage:**

Three Phase WYE or Delta Connections

## **Input Frequency:**

400 Hz and/or frequency wild

## **Output Voltage:**

*Unregulated*

28 VDC Nominal

24.0-31.5 VDC Normal

*Regulated*

28 VDC +/-1%

## **Output Power:**

20 to 500 Amps

1400 to 14000 Watts

## **Overload:**

125% for 5 Minutes

150% for 2 Minutes

200% for 1 Minute

1200% for 1 Second

## **Ripple:**

1.5V p-p

## **Efficiency:**

88% Typical

## **Power Factor:**

0.97 Typical

## **Harmonic Content:**

Max 5% of the Fundamental