



## Auto Transformer Rectifier Unit for Aviation

The Auto Transformer Rectifier Unit (ATRU) is designed to convert a 3-ph aircraft AC voltage of 200 VΔ-400 Hz into a voltage of 270 Vdc. The ATRU consists state-of-the-art power conversion components and was developed for a US defense program of a unmanned aeronautical vehicle. All components are housed in an aluminium cabinet designed according to the general requirements of military aircraft.

### For Military Aircraft & UAV



#### Standard Features

- Wide temperature range
- High efficiency > 95%
- Low weight and size
- RTCA DO 160G
- MIL-STD 704E

#### Application

- Military fixed & rotary wing

#### Support Service

- Complete integrated logistic support (ILS)

#### Key Features of the ATRU

- 12 pulse rectifier
- Input EMI suppression filter
- Front panel LED indicators & external monitoring interface connector
- Power / weight ratio: > 1.38 kW / kg
- High MTBF
- Passive components



## Electrical Specifications

### Input

Voltage.....200 Vac, 3-ph  
 Frequency.....400 Hz,  $\pm$  8%  
 Voltage spikes  
 and transients.....Acc. to MIL-STD 704 E  
 Frequency transients.....Acc. to MIL-STD 704 E

### Output

Voltage.....270 Vdc  
 Current.....74 A  
 Ripple.....< 6 Vrms at 20 kW load  
 (without capacity load)  
 Overload.....110 A for 2 min  
 160 A for 5 sec  
 Efficiency.....> 95% at 100% load

### Monitoring

Temperature of the transformer and rectifier by PT100

## Environmental Specification

Temperature range..... - 40°C to +71°C (operation)  
 - 55°C to +85°C (storage)

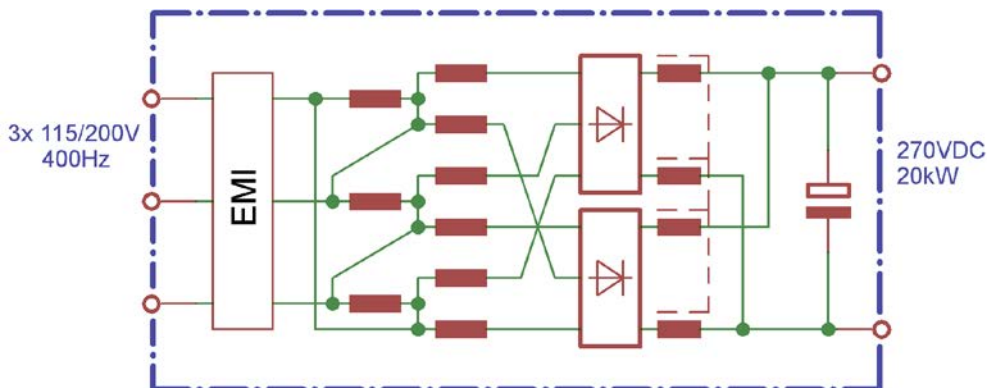
Humidity.....< 95%  
 Shock.....20 g/11 ms, crash 40 g/11ms  
 Vibration.....Random, 15 g RMS  
 Altitude.....- 500 up to +15.000 m  
 EMC.....Acc. to MIL-STD 461B, CE102 (> 150 kHz),  
 CE106 CS101,103-105,114,116,  
 RE102,RE103, RE02  
 Protection.....IP 20 acc. to DIN 40050

## Physical Characteristics

Dimensions.....Height 204 mm  
 Width 350 mm  
 Depth 164 mm  
 Weight.....14.5 kg

## Design Characteristics

Power per weight/  
 per volume.....1,380 W/kg  
 Isolation resistance.....> 100 M $\Omega$   
 MTBF.....> 1,000,000 h



ATR 2060 Block Diagram