



# GG-1570-20

The GG-1570-20 power converter / Backup Battery is a nominal 13.8 volt to 13.8 volt dc—dc converter with a backup battery to supply power during starting etc.

This device is designed for use on trains, buses, trucks, or other automotive devices where clean regulated electrical power is required.

The input of the converter is protected against polarity connections. The converter is also protected against thermal and over voltage input with automatic recovery.

The converter protects against transients up to 300 volts with an energy content of up to 10 joules.

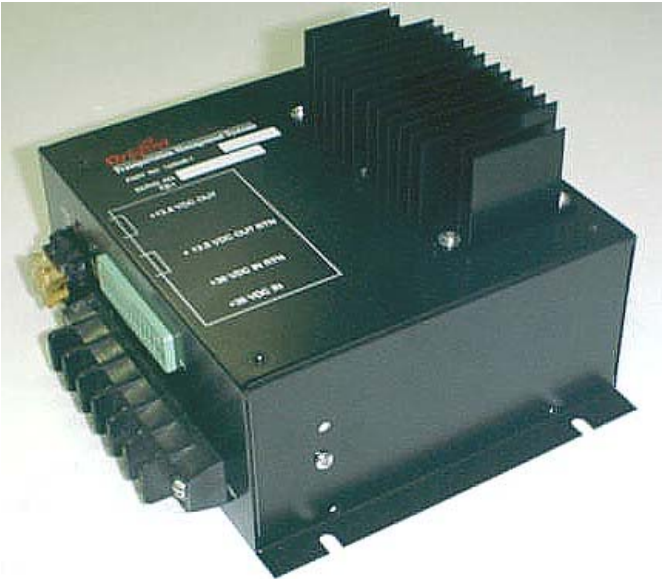
The converter can handle vibration and shock as is normally encountered in the automotive environment and storage temperatures of 85°C.

The Battery backup can provide 2 amps for up to 12 minutes and of course lower currents for longer periods.

The curve on page 2 shows the battery output voltage for current drains of 1.5 and 2.0 amps.

A logic signal is available in the event of a power loss.

This UPS is packaged in a small, metal enclosure for maintenance free operation.



Note: Picture for ref only; shows 7.0 " width rather than 9.0".

### Performance Specifications:

- Input Voltage Range = \_\_\_\_\_ 10.6 - 16.2 VDC
- Output Voltage = \_\_\_\_\_ 13.8 VDC
- Power Output = \_\_\_\_\_ 300 Watts cont. @ 13.8 VDC
- Ripple = \_\_\_\_\_ < 1% of output
- Regulation = \_\_\_\_\_ +/- 2% Line/Load
- DC Isolation  
(Input/Output, Input/Chassis, Output Chassis)  
= \_\_\_\_\_ 1000 VDC
- Efficiency = \_\_\_\_\_ 87%
- Short Circuit Protection = \_\_\_\_\_ Automatic Recovery
- Reverse polarity protected input
- 2 fused outputs
- Battery Backup Output = \_\_\_\_\_ 12 Volt
- Battery Backup Engage Voltage = \_\_\_\_\_ 10.6 Volt
- Battery Backup Dis-Engage Voltage = \_\_\_\_\_ 11 Volt
- Battery Backup Shut Down Time = \_\_\_\_\_ 6.0 min
- Capacity = \_\_\_\_\_ 1.2 amp-Hr
- Rapid Discharge = \_\_\_\_\_ 2.4 amp for 6 min
- Recharge Time = 1 hour from full functional discharge to 95 % of full charge.
- Battery Replacement Life = \_\_\_\_\_ 6-7 yrs

### Physical Specifications:

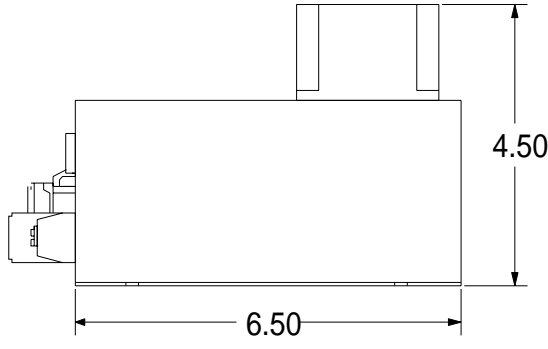
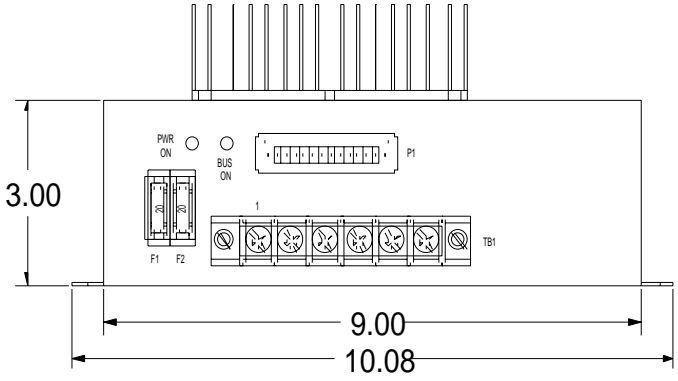
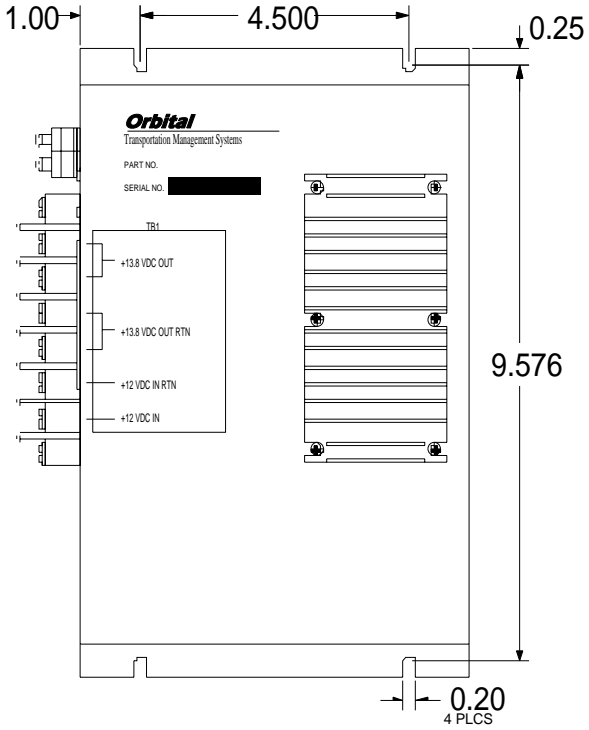
- Size: \_\_\_\_\_ 7.0 x 9.0 x 4.5h
- Finish: \_\_\_\_\_ Black Enamel (baked)
- Mounting: \_\_\_\_\_ Bracket
- Net weight: \_\_\_\_\_ TBD
- Marking: \_\_\_\_\_ White Permanent Ink
- Orbital Logo: \_\_\_\_\_ Red Paint (MS 485)

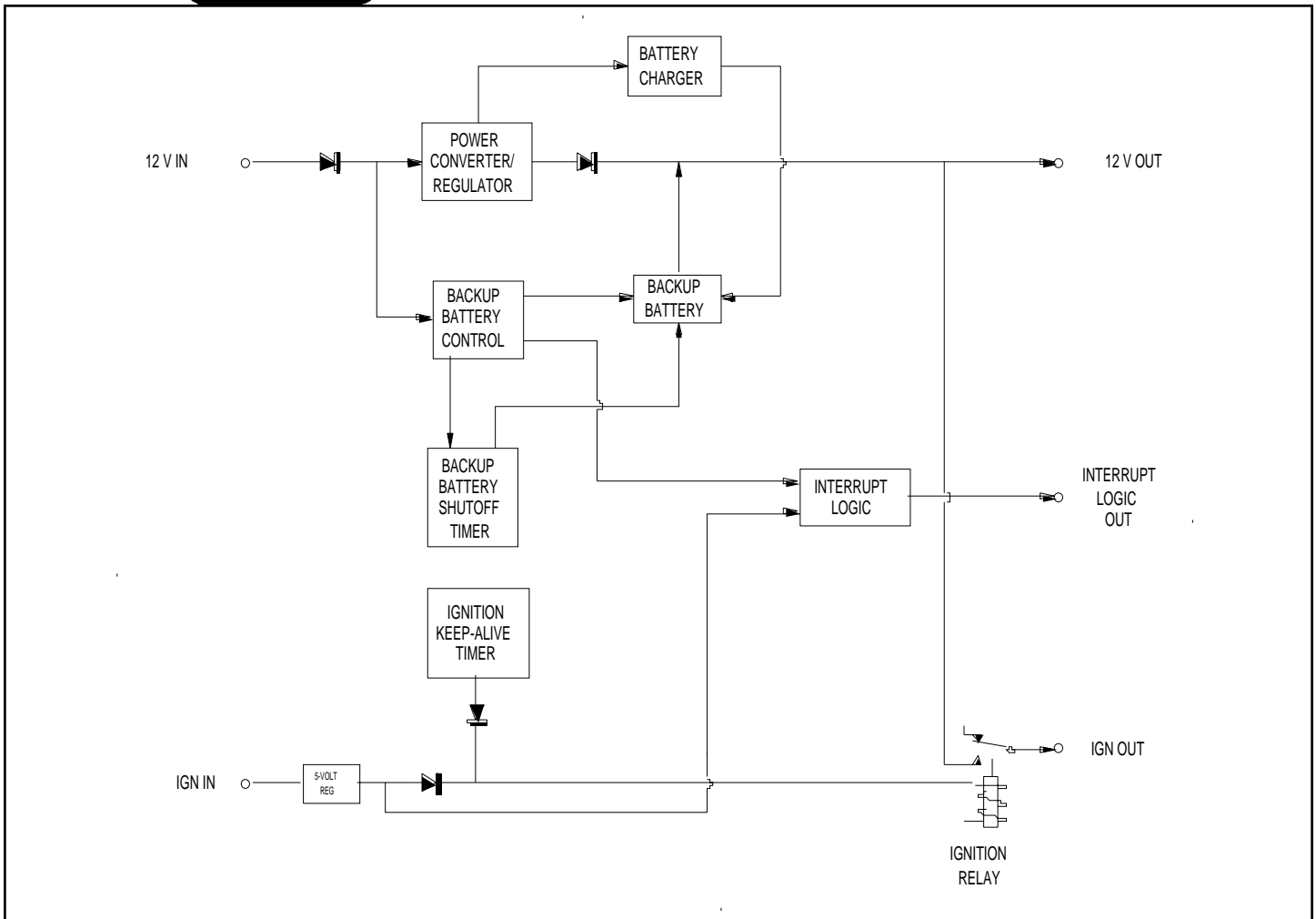
### Environmental Specifications:

- Operating Temp.: \_\_\_\_\_ -40 to 50°C<sup>2</sup>
- Storage temp.: \_\_\_\_\_ -40 to 85°C
- Sealing: \_\_\_\_\_ Splash proof and Dust proof
- Humidity: \_\_\_\_\_ 0 to 95% non condensing
- Shock: \_\_\_\_\_ Mil-Std-810  
Procedure I  
Functional shock for ground vehicles.
- Vibration: \_\_\_\_\_ Mil-Std-810  
Category 8 for equipment installed in wheeled vehicles.



# GG-1570-20





## NOTES:

**Backup Battery Control:** Monitors the input voltage and sends a signal to activate the backup battery if the input voltage falls below 10.6 V.

**Backup Battery Shutoff Timer:** Disconnects the backup battery after 6 minutes.

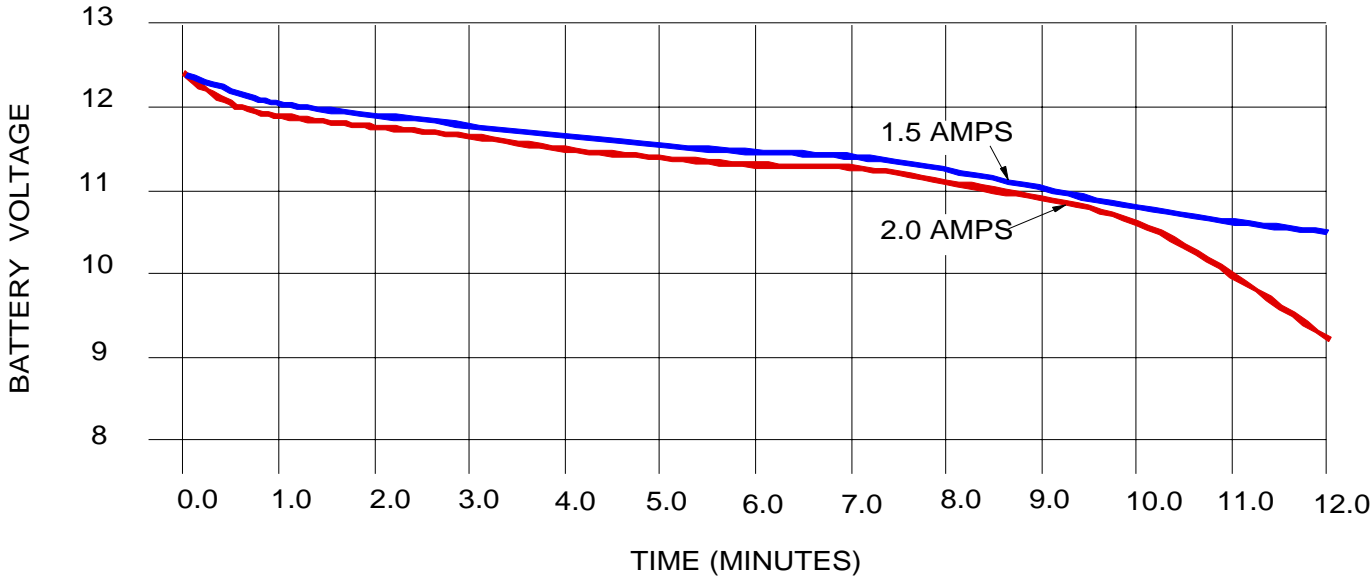
**Ignition "Keep-Alive" Timer:** Forces the "IGN OUT" signal to remain high for at least 8 minutes.

**Interrupt Logic:** Sets interrupt logic signal "High" if any of the following occurs.

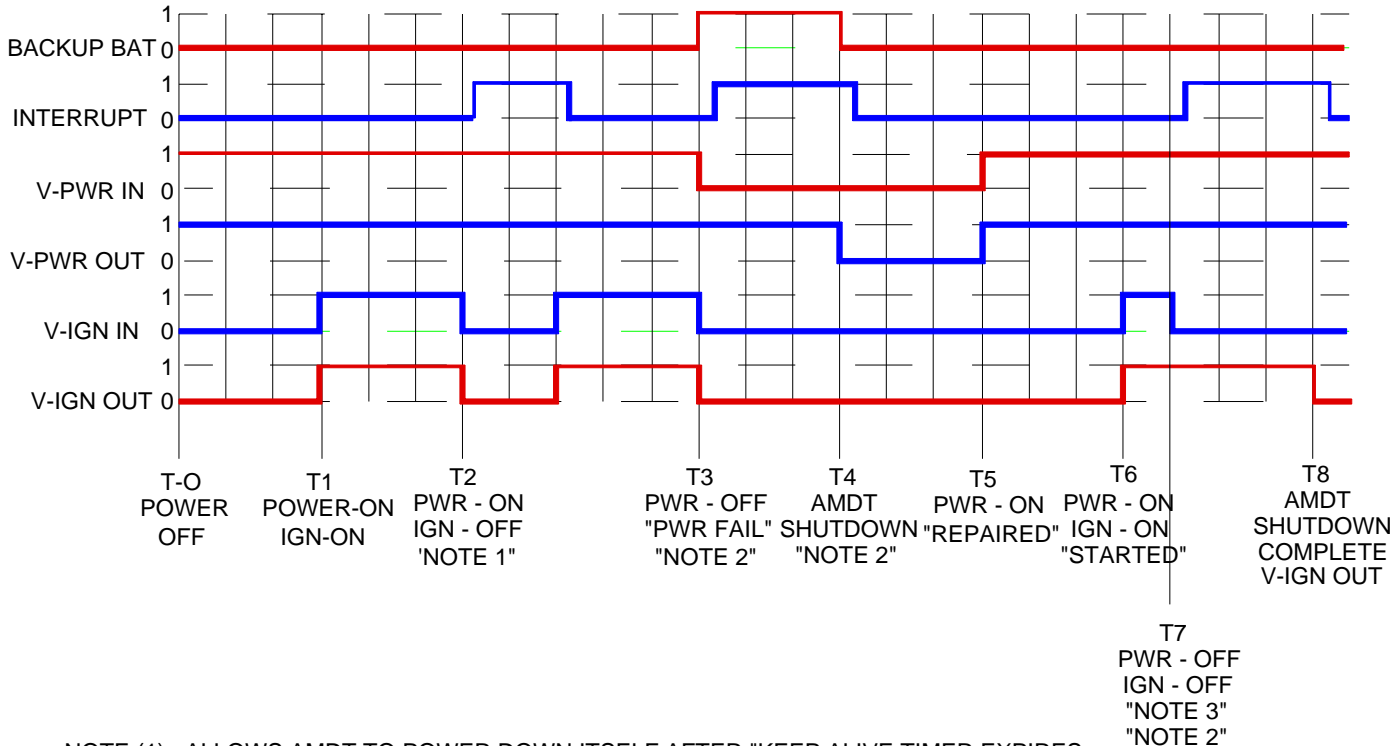
- "12 v in" power is lost.
- "12 v in" power drops below 10.6 v.
- Driver turns off ignition.



**BATTERY VOLTAGE vs TIME  
FOR SPECIFIED  
DISCHARGE CURRENT**



**TIMING DIAGRAM**



NOTE (1): ALLOWS AMDT TO POWER DOWN ITSELF AFTER "KEEP ALIVE TIMER EXPIRES."  
 NOTE (2): UPS TIME FOR SHUTDOWN = (6 MINUTES)  
 NOTE (3): IF IGNITION IS TURNED ON THEN OFF (T < 6MIN.), IGNITION STAYS HIGH AND INTERRUPT ACTIVATED.