



### Buck Inverter

3 phase, 50/60 Hz

450-800V DC input

Output ≤ 350V peak voltage loads

ATS Part # A520017

(See your Sales Rep for other input voltages)

#### Applications

- Rail
- Marine
- Heavy-duty EV

#### Features

- Suitable for light rail, marine and locomotive auxiliary loads
- For systems requiring 3-phase 50/60 Hz power with source DC voltages in the range of 450 - 800V with loads requiring peak voltages less than 350V.
- Reduces potentially damaging high input voltage supplies to appropriate levels for motors and other equipment.
- Generates a mid-bus voltage based on a user-defined reference voltage (325V default) through an IGBT Buck Chopper to a programmable mid-bus voltage.
- Includes a pre-charge circuit controlled by the inverter so DC bus voltage may be applied to the inverter without ramping the supply to its nominal value.
- Air-cooled, compact unit
- Conforms to IEC 1287-1: 1985
- All customer logic provided by solid state relays using voltage provided by customer.
- Additional voltage ranges available on request.



#### Specifications

	Input	Output
Rated Power @ Rated Volts	Variable	28kVA @ 230V <sub>RMS</sub>
Frequency Range	DC	50/60 Hz
Voltage Range	450 - 800V DC	230V <sub>RMS</sub>
Amps @ Rated Power	150 A	70A <sub>RMS</sub>
Short-time Output Current	200 A <sub>RMS</sub>	
Ambient Operating Temperature Range	-4°F (-20°C) - 122°F [50°C]	
Safe Operating Temperature	-4°F (-20°C) - 176°F [80°C]	
Cooling Method	Forced-air cooling	
Control Supply Voltage	36.5V DC (27 - 59V DC)	
Control Supply Current	0.5A nominal (2A max)	
Weight	47.2kg (104 lbs)	
Dimensions (H x W x L)	544mm (21.4") x 406.2mm (16") x 263mm (10.4")	

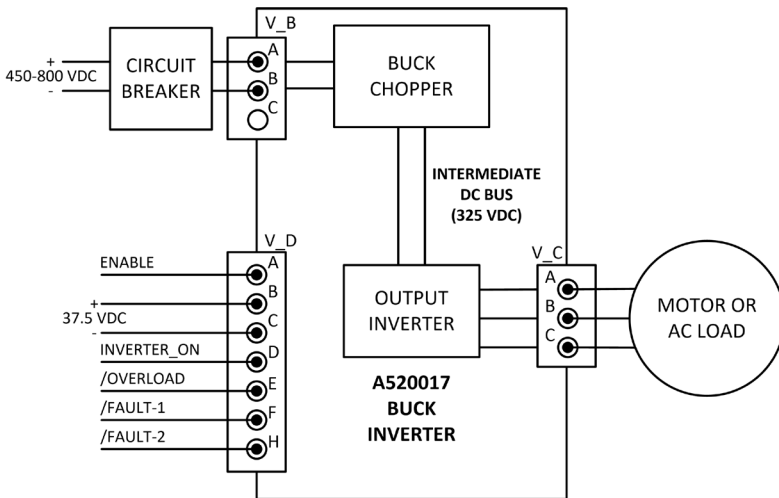
The values above are typical and are dependent on the motor and application

## Buck Inverter

### Product Description

The Buck Inverter is a 3-phase inverter designed to output voltage waveforms at a lower peak level than the DC bus voltage and in a fixed pattern to limit total harmonic distortion. The Buck Inverter generates a mid-bus voltage based on a user-defined reference voltage (325 V default) by applying pulses of the DC bus voltage (450 – 800 V) through an insulated-gate bipolar transistor (IGBT) to an intermediary DC mid-bus voltage. The Buck Inverter applies pulses of the intermediary DC mid-bus voltage through IGBTs connected in a half-bridge circuit to produce quasi-sinusoidal voltage waveforms at a user-defined fundamental frequency (60 Hz default), 120° out of phase from each other, with a peak amplitude equal to the user-defined reference voltage. The sinusoidal 3-phase voltages (230 VRMS default) are produced at the output of the Buck Inverter by connecting the pulsed quasi-sinusoidal voltages to a 3-phase sine filter.

### Connection Diagram



Example of Buck Inverter installed on light rail vehicle.



### Dimensional Drawing

